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*Handbook  
of  
Asia Minor  
Vol. II*

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# A HANDBOOK OF ASIA MINOR

VOLUME II

WESTERN ASIA MINOR

*Prepared on behalf of the Admiralty and  
the War Office*

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SEPTEMBER, 1919

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NAVAL STAFF

INTELLIGENCE DEPARTMENT

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## NOTE

*Asia Minor* is treated in four volumes, some of which are issued in separate parts. The first volume contains information of a general nature. The other volumes are devoted to the detailed description of topographical features, railways, roads, and cities. The second volume deals with the western part of the peninsula up to the Dalaman Chai, the rim of the plateau, and the route of the Anatolian railway from Afium Kara Hissar to Izmid. To the third volume (divided into three parts) are assigned the mountains of the north from the Bosphorus to the Halys, the central plains from Eskishehir to Kaisari, and the mountains of the south from the Dalaman Chai to the Lamas Su. The fourth volume contains a description of the eastern part of the peninsula, and is divided into two parts, devoted respectively to the region between the Black Sea and Kaisari and to the country round the Gulf of Alexandretta—Cilicia, Antitaurus, and North Syria.

Most estimates of mileage in the present book are based on the rough calculations of travellers or on sketch-maps. They are to be regarded as approximate.

Except in the case of the railways the figures of altitude represent in nearly every instance the metre heights of Philippon converted into English feet to the nearest multiple of five. They are, of course, merely approximate. Where varying altitudes are given for the same place it will be found that they form part of separate series given by different authorities.

It is necessary to emphasize the fact that in the circumstances the information given cannot be complete or up to date, and may occasionally be inaccurate. The Admiralty will be glad to receive corrections and additions.



## LIST OF MAPS FOR USE WITH THIS VOLUME

**PHILIPPSON.** *Topographische Karte des westlichen Kleinasien.* 1/300,000, 6 sheets.

*Geologische Karte des westlichen Kleinasien.* 1/300,000, 6 sheets, bound in Petermann's *Mitteilungen*, Ergbde. 167, 172, 177, 180, and 183.

**KIEPERT.** *Karte von Kleinasien.* 1/400,000, Sheets A II, B I, B II, C I, C II, D I, and D II.

**ADMIRALTY WAR STAFF I.D.** *Asia Minor.* 1/500,000, Sheet 7.

**G.S.G.S.** *Balkan States and Asia Minor.* 1/250,000, Sheets 2, 7, 8, 9, 14, 21, 35, and 36.

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## INTRODUCTION

General—Main geographical divisions—Climate and vegetation.

### GENERAL

A GLANCE at the map shows how close is the geographical connexion between the western and eastern shores of the Aegean. The latter gives a similar climate to both seaboard so that in early times essentially the same habits of life arose among the peoples of the European and the Asiatic side. Between these similar communities a natural bridge was provided by the Aegean islands, themselves but the highest peaks of a now submerged mountain system linking the mountains of Greece with those of Asia Minor. On the north the connexion between Europe and Asia Minor is even more intimate. The Bosphorus is simply the river by which the great lake of the Black Sea drains into the Sea of Marmara, to pass thence through the Dardanelles into the Aegean.

On the other hand the peninsula of Asia Minor exhibits within itself a great geographical contrast. Mountain ranges of the most varied conformation and direction rise from a seaboard unequalled for variety up to a uniform plateau in the interior. River valleys produced by the general sinking of the land in remote geological periods provide fertile areas between the mountain blocks and in some cases lead gradually from the coast right up to the steppe-like central table-land. An equal contrast naturally is to be found in climate and vegetation. In the coast-lands the winters are mild and the sea-winds bring abundant moisture so that there is drought only in the height of summer. In contrast to this the highlands suffer from scarcity of rainfall and the bitter winters

of the steppes, conditions which result in a mode of life very different in its main aspects from that natural to the coast-lands.

The mountain rim which encloses the central plateau is itself rather an elevated table-land than a well-defined ridge. There are therefore numerous lines of access from the coast to the interior. The easiest avenues, however, are those which lead directly from the shores of the Aegean up the valleys of the Gediz Chai (anc. Hermos) and Menderez Chai (anc. Maeander). The centre of the plateau is a great depression with no exit for drainage. This part of it therefore is desert steppe which interposes a barrier to communication between north and south. Consequently the trend of traffic on the plateau is from west to east or from east to west, either along the foot of the northern or along that of the southern mountain rim. On these sides communication between the extreme west and the extreme east is practically uninterrupted. On the north the main obstacle, the Kyzyl Irmak (anc. Halys), was bridged in very early times, while on the south, to which the main road from the west up the great valley depression of the Maeander gives direct access, there are practically no natural obstacles whatever. On the east, roads lead through passes or mountain valleys into Cilicia, Syria, Mesopotamia, and Armenia.

It is clear then that Asia Minor is destined to be a bridge between East and West, between the civilizations of Asia and Europe, and this is in fact the position that it has held throughout history. Its importance as such made it in classical and mediaeval times a battle-ground between the rival empires of Europe and Asia. In later history the shifting of world-power has made the struggle less directly one between East and West. The importance of the bridge has not, however, been thereby diminished. It has even been increased, for the development of railway communications has not merely shortened the road from Europe to the Middle East but has also given both Europe and Asia close connexion by land with Egypt and the continent of Africa.

The present volume deals only with the end of the bridge nearest to Europe. The eastern boundary which it has been found most convenient to adopt begins on the north at the head of the Gulf of Izmid, follows the line of the Anatolian railway to Afium Kara Hissar, and thence runs south through Sandykly, Dineir, Buldur, Fughla, Sügüt, and Khorzum to Makri.

### MAIN GEOGRAPHICAL DIVISIONS

This western region may be divided, according to certain well-defined geographical features, into five zones:

1. The northern zone is bounded on the south by the watershed between the Sea of Marmara and the Aegean. It therefore looks towards the Sea of Marmara and the Black Sea. Within this region the main geographical features are: a very fertile strip lying behind a coastal range and, south of this strip, a wide expanse of hill country roughly equivalent to the highlands of ancient Mysia. In the latter, though the hills as a rule are not very high, the courses of the rivers are so tortuous that communication has always been difficult. This highland region has always been of lower culture than the coast and mainly agricultural.

2. The second zone lies between the Marmara-Aegean watershed and the Gediz Chai valley. It therefore includes the coastal strip on the north side of the Gulf of Edremid as well as the Edremid plain. On the east it extends as far as the depression running from the upper valley of the Bakyr Chai to Salykhly. Apart from the plain of Edremid there is only one fair-sized plain in this zone, that of the Bakyr Chai (anc. Kaïkos). And, since the plain of Edremid is not provided with a fertile hinterland, the plain of the Bakyr Chai, with the town of Bergama, is therefore the natural centre for the whole of this zone. Unlike the main valleys farther south, however, that of the Bakyr Chai does not reach up to the edge of the central plateau, and consequently it has no considerable traffic with the east. To the south-east there is indeed easy com-



munication with the valley of the Gediz Chai, but the traffic from the interior which comes down the latter has no inducement to turn northwards. The main importance of the Bergama region is therefore derived from its communications with the Hellespontine and Pontic areas on the north.

3. The region covering the valley plains of the Gediz Chai and Menderez Chai has always been, in proportion to its size, the most fertile and thickly populated part of the peninsula of Asia Minor. It is also the district which provides, along the line of its great river depressions, the easiest roads to the interior. If nearly all the trade from the western coastlands now finds export at Smyrna instead of being distributed, as in ancient times, from a large number of rival emporia, this is due in the main to the altered conditions of modern land and sea traffic.

4. The mountain region south of the Maeander valley and west of the Dalaman Chai has always formed a district by itself. It is the ancient Karia, and here the spurs and outliers of Taurus come right down to the coast. There are few good natural lines of communication within this zone. So far as they exist they connect the district with the Maeander valley rather than with the sea. The coast itself is very rich in harbours, which in the early days of seafaring favoured the establishment of towns depending on coastal traffic, and also, at different periods in history, provided convenient bases for piracy.

5. The districts of the area covered by this volume which have not been included under the four zones outlined above consist in the main of rolling plateau country and form a fifth geographical zone. Only the northern parts of this zone fall within the limits of the central plateau properly so called. The greater portion of it, from the eastern boundary of the second zone on the west to the line Murad Dagh-Chivril-Dineir on the east, lie at a somewhat lower elevation than the plateau proper and may be regarded as a kind of transition plateau region.

## CLIMATE AND VEGETATION

Within our area three main climatic areas may be distinguished :

1. The *Pontic area* covers the region outlined above as the first zone. The climatic features distinguishing this region from the more southerly areas are a greater rainfall more evenly distributed over the whole area and colder winters. These features are the natural result of the north and north-east winds from the Sea of Marmara and the Black Sea, and they give to this district a vegetation noticeably different from that of the more southern areas. While the coastal vegetation is largely evergreen, the hills farther inland are clothed with thick woods of beech, oak, and pine, which recall those of central Europe. The cultivated plants also are, roughly speaking, identical with those of the southern parts of central Europe and the northern parts of the Mediterranean region. The chief varieties are olives, vines, cereals, cotton, opium, tobacco, sesame, and fruits.

2. The *Mediterranean area* covers the areas included under the second, third, and fourth zones in the geographical division already made. The climatic characteristics here are intense heat in summer and a mild winter temperature. The prevalent winds in summer are from the north and lose the greater part of their moisture before reaching this region. In winter the winds blow from south and west and carry a copious rainfall. These climatic conditions result in a characteristic type of vegetation—maquis on the lower levels near the coast and open forest on the higher elevations inland.

3. The *plateau area* comprises what has been distinguished above as the fifth zone. Greater extremes of temperature are experienced here than in the Mediterranean and Pontic areas. The winters are cold, with snow and keen frost. In summer the heat is intense by day, while the nights are cool. Rainfall is much slighter than in the other two climatic areas, and this, combined with other factors, has its counterpart in the vegetation. Forest trees in this region are few except on

the mountain blocks which rise here and there out of the plateau or on the hills and in the valleys of the transition area. Scattered bush and low shrubs or grass are the natural covering of the soil.

For further details on Climate see Vol. I of this handbook and *The Climate of the Eastern Mediterranean* (I. D. 1117).

# CHAPTER I

## PHYSICAL FEATURES

First zone—Second zone—Third zone—Fourth zone—Fifth zone.

THE description here given of the surface of western Asia-Minor follows the division of the country into geographical zones, and proceeds in each case in a general direction from west to east (see pp. 11-12 above).

### FIRST ZONE

#### *The Troad*

The western end of the first zone does not exhibit the first two of the geographical features noted above. The coastal range and depression there referred to begin only on the east side of the Gönen Chai. The district west of the latter river is, roughly speaking, the area known as the Troad. It is in the main an agricultural hill district, and it connects itself with the Mysian hill country to the east.

Along the western side of the Gönen Chai valley, for nearly its whole length, stretches a lofty and continuous chain of hills. Some miles south of Gönen these hills come close to the river, forming the left-bank side of the gorge through which the river flows in its middle course.

Above the gorge the country opens out to the upland valley basin of Avunia. South of this basin bare highlands rise to a series of pine-covered summits considerably over 2,000 ft. in height, which form the eastward continuation of the Kaz Dag, better known by its ancient name, Mt. Ida. The head of the Avunia basin is enclosed by the Haji Öldüren Dag, a portion of a range called Güngen Dag which runs north-north-east from Mt. Ida, gradually decreasing in height and showing no marked col. Just north of Haji Öldüren this range makes a sudden bend to the east, still gradually falling

in height. Immediately north of this bend there is a low col, from which spring the head-waters of the Trojan Menderez Chai (anc. Scamander), and which leads with a hardly perceptible ascent from the Scamander valley into that of the Gülle Chai, one of the main affluents of the Bigha Chai. The point where the Güngen Dagħ bends to the east is the orographical centre of the whole of this region, for it is here that the three main valley systems of the Menderez Chai, Bigha Chai, and Gönen Chai unite.

South-south-west of the Güngen Dagħ rise the pine-covered slopes of Mt. Ida, the culmination of a range which overlooks the whole of the northern shore of the Gulf of Edremid. The summit of Ida itself has two peaks of nearly equal height, or, to speak more strictly, there is on the east a nearly level plateau with three projecting points, to the north and west of which lies a rounded ridge with two or three humps rising from it. The plateau is called Sary Kyz, and the rounded ridge is known as Baba. The height is approximately 5,800 ft., and from this elevation the range runs west-south-west, decreasing steadily in height to the Dikeli Dagħ (alt. 2,000 to 2,500 ft.). West of the Dikeli Dagħ the range comes to an end a few miles east of the narrow neck separating the middle valley of the Tuzla Chai from the coast at Behram.

On the north side of the Tuzla Chai valley the country rises again in hills which reach the sea just beneath the prominent peak of Sakar Kaya. North-east of Sakar Kaya is the ridge of Chigri, from which it is possible to see most of the Hellespont.

It is impossible to describe the rest of the hill system of the Troad in any detail. Mention may, however, be made of a range which, starting from the Marmara coast at Cape Karaburun, runs parallel to that coast and afterwards to the Dardanelles, the high summits lying back from 5 to 10 miles inland. About 10 miles east of Chanak Kalesi the range strikes south and then slightly east of south till lost in the high plateau country north-east of Bairamich. The effect of this range is to cause all valleys running to the Dardanelles above Chanak and to the Sea of Marmara before Cape Kara-

burun to be short, steep, and without easy exits to the interior. It also directs the main drainage and the longer valleys towards the north-east or north-west.

A few details of some of the hills enclosing the main valleys of the Troad are given in the routes. Large areas outside the valley basins are, however, unmapped. The hill system, generally speaking, is complicated, and like the Mysian hill country west of the Susurlu Chai it is distinguished by few characteristic ridges or summits.

### *The Coastal Range*

The coastal range spoken of on p. 11 above is a chain of swelling downs which, rising not far west of Edinjik, fall to a saddle at that place, rise to about 1,000 feet on the east side of it, fall again to a few hundred feet at Panderma, and then, in the Kara Dagħ, attain an elevation of over 2,000 ft. On the east the Kara Dagħ slopes to the Susurlu Chai, beyond which the hills rise again in two ranges separated by the Ülfer (Nilufer) Chai. The northern of these ranges is the higher, but for about 35 miles it nowhere rises above 2,000 ft. The southern attains a height of something over 1,000 ft. and, sloping on the east to a plateau broken by easy valleys running to the Ülfer Chai, comes to an end at the Hassanlar Dere about 10 miles west of Brussa. On the eastern side of the road from Gemlik to Brussa the northern ridge is continued by a higher mass, with summits of over 4,000 ft., which again decreases in height farther east till the Sakaria (Sangarios) valley is reached.

Generally speaking, the seaward face of this coastal range is abrupt. The landward slopes are featureless and, except towards the eastern extremity, bare and arid.

### *The Coastal Depression*

The great depression between the coastal range and the Mysian hill country to the south is roughly 80 to 90 miles long by 5 to 15 miles in width. It may be regarded as falling

into three sections : (1) the region between the Gönen Chai and the Manyas Göl; (2) the area between the Manyas Göl and the Abulliond Göl (Lake of Apollonia); (3) the remainder, from the Abulliond Göl to 10 or 15 miles east of Brussa.

1. The first of these sections consists partly of plain, as for example near the mouth of the Gönen Chai or the edge of the Manyas Göl, but for the most part of undulating country with a general elevation of not much over 300 ft., drained by easy valleys and broken by low hills rising like islands to 600 or 700 ft.

2. The district between the Manyas Göl and the Lake of Apollonia is the widest part of the depression, and here the country is marshy in places. It is practically flat except for some low hills on the east side of the Manyas plain. The most remarkable of these hills is the abrupt crag crowned by the Byzantine castle of Poemanenon (Eski Manyas). Patches of the flat, but mostly to the east of the Susurlu Chai, are broken by undulations 200 to 300 ft. high. The most important centre, Miikhalij, stands on an 'island' of rising ground.

3. The eastern end of the depression itself falls into two sections, the western of which is occupied partly by the low hills in which the southern section of the coastal range in this region ends, partly by a flat generally called the Kiti plain. The other section is the plain of Brussa.

### *The Mysian Hill Country*

The highlands lying behind the coastal depression may, if we exclude the massif of Olympus behind Brussa, be conveniently treated in two sections, west and east of the Susurlu Chai respectively. As the boundary between this region and the next zone to the south is the Marmara-Aegean watershed, and this on the west is formed by the eastward continuation of Mt. Ida, it is evident that the eastern section stretches considerably farther south than that on the west.

The latter is also distinguished from the eastern region by



its general lower elevation. There is no marked slope to the north. The ridges mount to 1,000 ft. or more, but are seldom sharp. Individual heights may attain 2,500 or 3,000 ft. The watershed itself is not a well-defined ridge, but rather a plateau across which the line followed by the water-parting winds irregularly eastwards. The rivers frequently take very winding courses, sometimes through narrow glens, particularly where the rock formation is limestone, at other times with easy banks which give room for cultivation and pasturage.

In contrast to the plateau-like nature of the hill country west of the Susurlu Chai, that to the east of the river is very highly diversified. The whole area is a conglomeration of summits and ridges of varying heights and directions, intersected by deep winding valleys often wild in character. The general slope of the country, as shown by the rivers, is towards the north, with a general westerly inclination, and, though the massif of Chatal Dagħ (alt. 4,230 ft.) overtops many of the ridges and peaks south of it, nevertheless the greatest heights are found towards the south. The broad mountains between Chatal Dagħ and Mt. Olympus reach at the most a height of 3,000 ft. Between Chatal Dagħ and the depression in which Balat lies stretches a region of tangled hills broken by deep valleys, above which the highest summits rise to heights varying from 3,500 to 4,250 ft. South of the Balat depression the country rises till it culminates in the Alacham Dagħ, Uluz Dagħ, and Ak Dagħ (alt. 5,250 to 7,100 ft.), which fall on the east to the Inekullar Chai and on the west and south to the deep valley of the Simav Chai. South of the latter the chain formed by the Kepez Dagħ, Demirji Dagħ, and Simav Dagħ forms the southern limit of the area under discussion. With this chain the country begins to slope to the south, and the distinguishing features of the Mysian hill country come to an abrupt end. East of the Inekullar Chai rises the chain of Egrigöz Dagħ, which there forms the eastern boundary. From its eastern flanks stretches part of the border region of the central plateau.

*Keshish Dagħ (anc. Olympus Mysius) and Dumanich Dagħ,  
with their Outliers*

The Mysian Olympus stands at the north-eastern corner of the Mysian hill country as a bastion 25 miles long and 6 to 10 miles broad, with a general direction from west-north-west to east-south-east. The north-western, and lower, part of the mountain (rising to 4,600 feet) projects into the plain west of Brussa. This part is much broken by valleys. It rises to a broad undulating terrace (alt. 5,250 to 6,250 ft.), and forms a step to the main mass, which for an uninterrupted distance of 12 or 13 miles has a height of from 6,500 to 7,800 ft. The summits are rounded, and the highest reaches 8,360 ft. On the south-west side the mountain falls more steeply than on the north, forming an abrupt continuous wall from a height of 4,000 ft. up to the summit of the ridge. On the north-east lies a belt of hill country crossed by the road from Brussa to Inegöl. This belt, uniting for some distance on the north with the continuation of the coastal chain, divides the Brussa plain from that of Yenishehir, which may be regarded as an eastward extension of the great coastal depression. On the south the hill belt separates the Brussa plain from that of Inegöl, and projects eastwards towards the undulating hill country lying between the Koja Chai and the Kara Su.

At its south-eastern end the main mass of Olympus is connected by a high ridge with the broad rampart of Dumanich Dagħ, whose summits reach a height of over 6,000 ft. On the west this ridge falls to the upper valley of the Ülfer Chai and to the projecting corner which the border region of the plateau sends up to the north in this area. On the east the Dumanich Dagħ itself appears to stretch out to an undulating highland with an altitude of 5,250 to 5,600 ft.

The system formed by Mt. Olympus and Dumanich Dagħ is thus not only the highest but also the most extensive high range in the north-west of Asia Minor, and it forms an effective climatic barrier between the damp coastal region and the dry country of the interior,

*The Peninsula of Cyzicus (Kapu Dagh) and the Hills North of the Iznik Depression*

These two areas form, so to speak, annexes to the first zone. The peninsula of Cyzicus is practically an island, and appears to have been at one time separated from the mainland. The marshy isthmus which at the present day joins it to the southern shore of the Sea of Marmara is only three-quarters of a mile across and very little raised above sea-level. From north to south the peninsula measures about nine miles and about twice that distance from west to east. The western corner is occupied by the peak of Klapsi, while the corresponding eastern corner consists of rolling country capable of supporting the considerable village ports of Mihani-ona and Peramo. The intermediate section is almost entirely mountainous and contains the chief range of the peninsula, running roughly north-east and south-west with the twin peaks of Dede Bayr and Adam Kaya, from which the Turkish name of the 'island', Kapu Dagh ('Gate Mountain'), is perhaps derived. The slopes to north and south are cut by deep valleys, which in several cases run up to passes deeply cut in the watershed and affording easy passage between the northern and southern sides of the peninsula.

The system of rounded summits and ridges stretching from Cape Bozburun to the Sakaria (Sangarios) may perhaps be regarded as part of a secondary coastal chain, of which the western end now appears only in the Cyzicus peninsula and the adjoining islands. There is no detailed account of these hills available. The slopes appear to be generally easy, and the greatest heights are found towards the east, where the Gök Dagh overlooks the Sakaria valley from a height of 5,300 ft.

## SECOND ZONE

The second zone falls naturally into two divisions, north and south of the Bakyr Chai respectively.

*The Country North of the Bakyr Chai*

Behind the coastal plains from the Gulf of Edremid to the Bay of Dikeli rises a mountain system broken into a maze of rounded summits by very winding, often narrow, valleys, most of which fall southwards. On the east of Aivalyk the forehills rise in an undulating plateau called Armudova. Farther south, on the east side of the coastal strip of Ayasmand, they form a monotonous uniform landscape varied here and there by a few conical peaks, such as the Assarkaya near Beyler or the Adakaya some miles farther north. A broad summit south-east of Beyler dominates the whole of this area. An outlying portion between Dikeli and Chandarly, which goes by the name of Kara Dag, calls for no special mention. A description of the small lake of Kara Göl in these outliers is given in Route 42.

It has been already pointed out that the watershed between the Bakyr Chai valley and the Sea of Marmara has rather the nature of a plateau than of a definite ridge (see p. 19 above). On the south side of the water-parting there is one considerable upland plain, that of Kosak (alt. between 1,400 and 1,600 ft.). In this plain the drainage of the neighbouring hills collects, to make its way from the south-western corner down an alternately narrowing and widening valley to the sea near Ayasmand. The hills on the west side of the plain are low and plateau-like in character. On the south side they are also flat, but rise towards a watershed running from south-west to north-east. The highest summits of this watershed are reached at the south-western end in the Geyikli Dag. This is a ridge about  $2\frac{1}{2}$  miles long running from west to east. It has a relatively bold outline, and from a height of 3,770 ft. overlooks, on the north, the deep wooded valley of the K  m  r Dere and, on the south, the district round Bergama. On the north side of the Kosak plain rises the broad chain of Yailanjyk Dag, the top of which is over half a mile wide. It falls steeply to the south-east. Its highest point, at the south-western end, reaches 4,000 ft. and affords a good view of the



PLATE I



THE VALLEY OF MENTESHLEH.

(To face p. 23)

surrounding country. North-east of the Yailanjk ridge the whole mountain system culminates in the Madaras Dag (anc. Pindasos), a broad ridge running from west-north-west to east-south-east, the top forming a bare undulating plateau over a mile wide in places. The latter consists of a long central depression flanked by two rows of rounded knolls. The northern row is the higher, but slopes gently; the southern is more rocky. At the eastern end of the ridge is the highest summit, Maia, whose easy slopes rise to 4,400 ft. To north-west and north-east the Madaras Dag appears to slope towards high plateaus, on the north side of which rise several broad summits, Cham Tepe, Sary Tepe, Sevi Bey, &c., which overlook the plain of Edremid and the upper basin of the Freneli Chai.

North-east of Bergama lies the valley system known as Nevahi Bergama. Seen from the south the hills of this system rise first to a kind of terrace about 800 ft. high, dominated at the south-western end by the remarkable crag of Yenigüde. Farther back the landscape is bounded by a wooded ridge, 2,000 to 2,600 ft. high, which extends from the hills behind Bergama to the Akmas Dag, the latter forming the Marmara-Aegean watershed behind Örkütler. The bare summits of Madaras Dag can be seen overtopping the whole.

On the east side the Nevahi Bergama system is divided from the valley system of Kerasun by a fairly high double range separated by the deep valley of Menteshler. The two ridges composing this range unite on the north side of the village of Menteshler, and widen out to a plateau dominated by the conical summit of Türkmen Tepe.

The valley system of Kerasun is of an open easy character, which, with the easy nature of the Uzunja Yaila (which here forms the watershed on the north), gives to the Kerasun depression its importance as the chief avenue of communication from the Bakyr Chai valley to the plain of Balikesir and the Sea of Marmara.

On the east side of the Uzunja Yaila the watershed makes



a pronounced bend southwards. It consists of an undulating plateau about 2,600 ft. high broken by numerous small depressions and dominated on the south by three prominent peaks about 3,300 ft. in height, the Kavuk Dagħ (Kapulu Dagħ) on the west, the Deniz Dagħ in the middle, and the Gyran Dagħ on the east. The Gyran Dagħ overlooks on the east the upper valley of the Bakyr Chai.

### *The Country South of the Bakyr Chai*

The western block of hills on the south side of the Bakyr Chai is known by the general name of Yünd Dagħ. These hills form, roughly speaking, gently undulating high plateaus now rising to ridges and cones, now sinking to broad valley depressions. The slope on the north side, to the Bakyr Chai plain, is fairly steep, and the streams here have cut deep winding valleys. The watershed between the Bakyr Chai and Gediz Chai reaches on the west little more than 2,000 to 2,300 ft., but attains 3,300 ft. towards the east. The broad ridge of Dumanly Dagħ (alt. 3,000 ft.), which overlooks the plain of Menemen, connects the Yünd Dagħ system on the south with the massif of Sipylos. On the south-west lie the hills behind Fochatyn, and on the south-east the island-like group of Mermere, which have no special features to distinguish them from the general system.

On the north-east the Yünd Dagħ merges into a block of mountains of much bolder outline. The most northerly of these is the imposing mass of Trakhala Dagħ. This consists of two steep ridges, the northern of which begins on the east side of the Jumaly Dere and ends behind Soma. It reaches a height of 5,400 ft. The second ridge lies a little to the south and, rising in small summits, runs east-north-east till it comes to an end at the large village of Trakhala. South of these two ridges rises the steep-sided flat-topped mass of Enaz Dagħ. On the east side of the latter lies the broad bare chain of Chamlyja Dagħ, which falls on the north in two well-pronounced steps and slopes steeply on the east to the plain of Kyrkaghach.

South-east of it low foothills form the watershed between the Gördük Chai and Bakyr Chai, and stretch north-east towards a serrated ridge 5 or 6 miles long, which on the west falls in irregular but easy undulations to the plain of Gelembe. On the north-east this ridge appears to slope to plateau-like hills bounding the plain of Sindirgi on the west, while on the south-east it merges into the region described under the fifth zone as the area of transition to the central plateau (see p. 47).

### THIRD ZONE

#### *The Erythraean Peninsula*

By the name 'Erythraean peninsula' is here meant the whole of the hammer-shaped and much indented promontory extending for about 50 miles from the plain of Jimovasy in the east to the Strait of Khios on the west.

The hammer-head formed by the peninsula of Karaburun consists of bare rolling uplands broken by stream valleys and rising to the steep continuous limestone ridge of Boz Dagħ, which runs north and south without any definite summit, reaching its greatest height (about 3,900 ft.) near the middle of the ridge. Southwards the general level of the country falls to bare hills, rising again in the promontory formed by the ancient Korykos.

On the north side of the latter the ground sinks again towards undulating country south of Vurla, which to the north merges in the irregular hill country composing the promontory between the Bay of Gölbagħche and the Gulf of Smyrna.

The hills between the Vurla depression and that of Jimovasy form one continuous undulating system. The southern portion of them comes close down to the sea between the plain of Sivrihissar and Cape Hypsili, but in general shows easy rounded outlines partly covered with pines. In the northern part the main ridge is that of Kyzyl Dagħ, which rises gradually towards the north, the system reaching its greatest height on the west side of the main ridge in a round-topped summit

with an approximate altitude of 3,500 ft. North-west of the latter lies a limestone ridge running north-north-east and ending on the north with the striking twin peaks called Dyo Adelphia ('Two Brothers'; altt. 2,865 ft. and 2,920 ft.), which serve as landmarks for vessels entering the Gulf of Smyrna.

*Mount Sipylos and the Takhtaly Dag*

Separated from Smyrna by the plain of Burnabad is the bastion of hills known in ancient times as Mt. Sipylos, which rises steeply on all sides as a sharply defined mountain block dominating the whole country surrounding the gulf. Its length from west to east is nearly 30 miles and its maximum breadth from north to south 12 miles. The narrow valley of the Gediz Chai divides it on the north from the closely related system of Dumanly Dag (see above, p. 24), while on the south a low rise between the plains of Burnabad and Nif connects it with another closely related massif, that of Takhtaly Dag.

Though the Sipylos block forms a continuous mountain-wall, it is nevertheless divided orographically by the pass of Sabanja Beli (alt. 1,800 ft.) into a western and an eastern portion. The former, called Yamanlar Dag, rises evenly from north and south to an altitude of nearly 4,000 ft. As it is followed westwards it assumes more and more the appearance of a ridge with well-defined peaks. The eastern portion, the Manisa Dag (alt. nearly 5,000 ft.), is a striking mass composed chiefly of limestone which rises by steep slopes on the north to broad upland plateaus. On this side the great rock-walls east of the town of Manisa form a particularly imposing spectacle. On the southern side the fall is less abrupt.

South of Mt. Sipylos lies the equally high, though less extensive, massif of Takhtaly (or Nif) Dag, which is really a continuation of the northern block. Its grey walls, though 6-7 miles distant from Smyrna, appear to overhang the town from near at hand. The general lie of the ridges is north-east.

*The Tmolos System*

Towards the south-east the Takhtaly Dagħ falls to a belt of lower hills, over which communication between north and south is effected by the Karabel pass. East of the Karabel the mountains rise again in a broad chain stretching eastwards on the north side of the Kūchūk Menderez valley. For convenience' sake this chain may be called the Tmolos system, from the ancient name of the Boz Dagħ between Sardis and Ödemish, where it attains its greatest altitude (7,280 ft.). It may be considered in two portions, the first extending as far east as Boz Dagħ and the second stretching east of Boz Dagħ and merging in the twin system of Messogis (for which see below).

*Western Portion of the Tmolos Range.*—On the north side of the western portion lies a maze of foothills of fantastic shapes broken by many steep-sided ravines. The height of these spurs rises in places to about 2,000 ft. The mountain-sides themselves are more uniform but rise fairly steeply. Behind Ödemish in particular they form an imposing wall of rock over 3,000 ft. high. From the upper edge of the mountain-slopes there stretches back an undulating region of high plateaus broken by rounded hills and steep ridges. The general direction of the latter is north or north-east. Dominating the whole, rise isolated peaks, the limestone summit of Mahmud Dagħ on the west (alt. about 4,300 ft.), the marble mass of Gyr Dagħ north-west of Ödemish (alt. about 4,000 ft.), and, highest of all, the main summit of the system, Boz Dagħ (alt. 6,985 ft.).

South of Boz Dagħ begins a belt of outliers stretching eastwards till it merges in the united systems of Tmolos and Messogis east of Kelles.

*Eastern Portion of the Tmolos Range.*—East of Boz Dagħ the system continues in the long ridge of Kangal (or Pirnar) Dagħ, which runs north and south with a greatest altitude of about 6,500 ft. Then it assumes the form of a broad-backed chain stretching eastwards. Easy summits and depressions

diversify the upper levels of the chain, which in Chaush Dagħ rises to between 4,500 and 5,200 ft. and in Mesargidi reaches 5,900 ft. The watershed lies towards the south side of the chain, which on that side consequently falls steeply, with few valleys to break the slopes. Northwards on the other hand the fall is more gentle, and the valleys more numerous and deeply cut, breaking the chain into ridges and in places into pyramid-like peaks. The passes across the range do not fall much below the general level with the exception of the most westerly, that of Ovayk (alt. about 3,300 ft.). The range narrows more and more towards the east. East of Alashehir it is cut through by the valley of Derbend Dere, and the general level falls abruptly to about 3,300 ft. A short distance farther east, at the Kyzyk Dere, the average height is only about 2,600 ft., above which the Mehmedli Dagħ, in which the range comes to an end, rises not more than from 300 to 600 ft.

### *The Messogis System*

The Messogis system is here taken to include not merely the Messogis chain properly so called, which begins to the east of Ayasoluk, but also its western extensions. The general shape of the system may be compared to a two-pronged fork, of which the handle is formed by the Messogis chain, the northern prong by the irregular group of hills composed of Karaja Dagħ, Barbandon Dagħ, and Alaman Dagħ, and the southern by Gümüş Dagħ and Samsun Dagħ.

The northern prong of the fork is on the west separated from the Kyzyl Dagħ system (see above, p. 25) only by the steep-sided ravine of the Takhtaly Chai. The chief summit at this end is Karaja Dagħ (alt. nearly 3,000 ft.), the lower slopes of which on the south-west come close down to the sea, while on the east they stretch out in foothills enclosing small plains towards the Alaman Dagħ. The latter, which with the Barbandon Dagħ forms the eastern end of the prong, is a broad mass of marble formation with rounded outlines falling on the south to the marshy estuary of the Küchük Menderez.

The southern prong of the fork is of much bolder outline than the northern. The western curve of it is the continuous ridge of Samsun Dagħ, one of the most striking ranges in the whole of western Asia Minor. It rises with steep flanks furrowed by many wild ravines to a height of about 4,500 ft. near the middle, the line of the crest now falling to saddle depressions, now rising in rounded summits. Only at the extreme western end is this mountain chain fairly low and easy. On the north-east it sinks to a depression not more than 1,300 ft. high, which affords an easy passage from the west coast over into the lower Maeander plain. North of this depression the hills rise again in Gümüş Dagħ, which has a general direction from west to east. The northern outliers of Gümüş Dagħ are separated from the irregular group of hills still farther north by a low col on the west, and on the east by the narrow valley of the Derbend Chai. This irregular group is itself divided into a western and an eastern system by the deep depression of Azizie, across which the Maeander valley railway passes and which leads down into the plain of Ayasuluk. The surface of the group is in general bare and stony, and the hill-sides, especially where they fall to the plain of Ayasuluk, deeply furrowed by stream valleys.

The eastern slopes of the hills just spoken of connect themselves with the main ridge of Messogis, which, except for its outliers at the western end, the Chamly Tepe, Gök Tepe, and Göl Dagħ, forms a continuous chain eastwards till it merges in the Tmolos system already described. Like the northern chain it may be divided into a western and an eastern portion.

*Western Portion of the Messogis Chain.*—In respect to general formation as well as direction and continuity the western section of the Messogis chain shows several points of resemblance to the Tmolos range. Thus the southern slopes, which come down in gentle spurs to the Maeander plain, correspond to the northern side of Tmolos. These spurs are, however, in the main less high than those of the northern range, the average height being about 1,000 ft.

except behind Aïdin, where they reach about 2,300 ft. The northern side on the other hand, like the southern flanks of Tmolos, falls more abruptly, from a relative height varying from about 1,600 ft. in the west to about 4,000 ft. in the east. The valleys on this side are all short.

The upper levels of this western end of the system are in general formed by broad ridges overtopped by higher crests. The valleys are fairly narrow, though they do not as a rule form gorges. They widen out in places to meadow-land, and their sides are often cultivable. The streams carry abundant water and drive mills. The watershed lies towards the north side of the chain, and the passes over it are fairly easy. The general level at the western end lies between 1,600 and 2,300 ft., while between Tire and Aïdin, where the system in this portion attains its highest summits with an altitude of 5,300 ft., it reaches 3,300 to 4,000 ft.

*Eastern Portion of the Messogis Chain.*—South of Bazaryeri, where the eastern section of Messogis may be regarded as beginning, the range has a breadth of about 14 miles. The general level now rises to about 5,000 ft. in the Baliamboli Dagħ, and sinks again with the Alem Gedik Bey Dagħ to 3,300 or 3,600 ft., some crests rising above this height to 4,000 or 4,300 ft. The breadth also increases, the range extending northwards in broad undulations to a width of 18 or 19 miles between Nazly and Dagħ Derbend. The watershed, however, continues due east from the line it follows in the western portion of the range, and consequently the distinction between the valley systems on the north and south now disappears. East of the Nazly–Dagħ Derbend line the range gradually narrows and the height decreases till the system ends abruptly with the Sazak Dagħ (alt. about 3,000 ft.).

#### FOURTH ZONE

The complicated nature of the mountain system on the south side of the lower Maeander valley makes a detailed description of it extremely difficult. For convenience it is

dealt with here in three belts or sections. A fourth section is added, dealing with the Khonas Dagħ and the hill country south-east of it.

*The Country between the Lower Maeander Valley and the  
Line Asyn Kale-Karajasu*

Three main geographical features may here be distinguished.

(1) Along the deeply indented west coast between the Maeander mouth and the Gulf of Akbuki, the country rises in a kind of terrace varying in height from 600 to 1,300 ft. A similar terrace may be traced in places along the edge of the Maeander valley, and to the south of Akbuki it continues at a rather greater altitude as far as Asyn Kale. (2) Behind this terrace, and rising steeply on the north, stretches a gently undulating upland region, the height of which, if we exclude the valleys, ranges from 1,000 to 3,000 ft. (3) Above this the massifs and ridges of Beshparmak Dagħ, Tekkeler Dagħ, Gök Bel, and Madaran Dagħ rise in sharp contrast to the general level. Karynjaly Dagħ should also be mentioned in this connexion, though it is less markedly defined. The relief of this mountain system is everywhere irregular, and the summits are characterized by great diversity of height and form. The greatest altitudes are reached in the Eli Dagħ (5,000-6,000 ft.) and Madaran Dagħ (6,020 ft.). Except for the main depressions (those of the China Chai, Ak Chai, and Dandala Su) the valleys take very winding courses throughout the whole region.

If we consider now the main massifs in this area from west to east, we have first of all the ridges of Chatal Alan rising steeply from the north to an irregular surface varying between 2,000 and 2,600 ft. and continuing south-east to the Bay of Asyn Kale in the broad marble wall of Kashykly Dagħ (anc. Grion ; alt. 2,600 ft.).

Immediately east of the Bafy Deniz rises the steep rugged granite mass of Beshparmak (anc. Latmos) forming a very sparsely populated and almost impassable mountain block.



The general level of the undulating country north-east of it is broken by a few isolated peaks (As Tepe, Masyn Kalesi, Tekke Kale, &c.), while on the east it is divided by a saddle of 2,600 ft. altitude from the almost equally wild region of Tekkeler Dagħ (alt. 4,000 ft.). Southwards towards the plain of Torba the latter sinks gradually till it meets the western end of Aksivri Dagħ (alt. 1,600–1,700 ft.), through which the upper course of the Sary Chai breaks in a narrow gorge. On the east side a broad saddle of not more than 1,700 ft. in height connects the Tekkeler Dagħ with the Gök Bel group, which comprises the short ridges of Doghansyz Dagħ and Gök Bel (altt. 3,300 and 4,000 ft.). The lower slopes of the latter fall evenly or in broad steps westwards to the plain of Torba and eastwards towards Leina. South of the Gök Bel rises the long ridge of Aksivri stretching east and west with a knob-shaped summit rising to about 4,000 ft. Its northern slopes are steep, the southern rather easier.

Between the China Chai and Ak Chai the chief mountain mass, and the loftiest in the section under present consideration, is that of Madaran Dagħ. Between its northern foot and the Maeander valley lies an expanse of the undulating plateau referred to above. This belt of plateau narrows towards the east and has a height of about 1,600 or 1,700 ft. From the China Chai and Ak Chai valleys on the other hand the mountain rises sharply in a continuous wall. Its upper levels form a broad rolling table-land 5,300 to 6,000 ft. high, to which the upper valley of the Madaran Chai, running south-west to the China Chai, gives the shape of a horseshoe.

The last massif to be considered in this section is the Karynjaly Dagħ. It rises fairly gently from the Maeander valley to an undulating plateau varying from 2,300–3,300 ft. in the north to 5,000 ft. in the south-east, gradually contracting in the latter direction. On this side it is separated by the Naryn Gedik pass (alt. 2,690 ft.) from the broad rounded mass of Avdan Dagħ, which projects southwards above the Davas plateau (see below, p. 39).

*The South-western and Southern Coastal Region*

This section is here treated in two portions: (1) the country south of the line Kuluk-Milas-Mughla and west of the line Giova-Mughla; (2) the remainder of the southern coastal region as far as the delta of the Dalaman Chai.

1. We begin with the irregularly shaped peninsula of Budrum (anc. Halikarnassos). The hills here do not everywhere come right down to the sea but in a good number of places leave room for small and generally fertile plains. The town of Budrum is built on one of these plains. The hills at the western end of the peninsula are of volcanic formation with an irregular stony surface and rather bare. The greatest height here is reached in Karaguz (about 1,600 ft.). Here and there are easy fertile valleys. East of this volcanic belt the hills rise steeply in the rugged ridge of Kara Dag (alt. about 2,200 ft.). South-east of Budrum they rise from the water's edge to a fairly broad plateau extending north-west to the foot of Kara Dag, and across a pass in this plateau (alt. 375 ft.) runs the only road from the peninsula to the mainland. On its eastern side the valley depression of Kyzyl Aghach, stretching from sea to sea, may be regarded as the eastern boundary of the peninsula. The height of the Kyzyl Aghach depression at the watershed between north and south is about 500 ft.

From here to the depression which runs south-south-east from Milas to Gereme the country is for the most part a gently undulating plateau varying in elevation from 1,000 to 1,300 ft., with small summits rising to 1,600 ft. Most of the valleys fall southwards and are dry in summer, like the whole of this region, which is one of the dreariest and most sparsely populated districts in the whole of the west of Asia Minor. A number of flat-topped limestone masses stand up above the general level. Thus on the west the Kaplan Dag rises steeply from the Kyzyl Aghach valley and from the north coast to a height of nearly 1,800 ft., on the east the heights behind the small villages of Gökbel and Bozalan reach

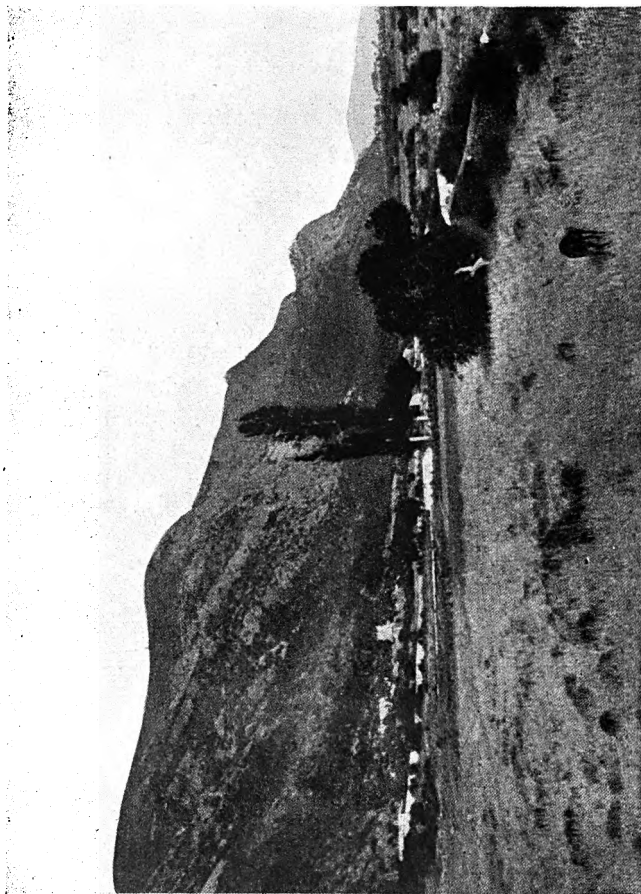
1,850 ft., while on the north-east is the stately Kara Dagħ (alt. 2,600 ft.). The latter, with the high ground stretching west from it to the Bay of Asyn Kale, is an outlier of the main system, being separated from it by an alternately narrowing and widening belt of plain which runs up from the north-west to the plain of Karova and then falls north-east to the plain of Tekirambar. This belt of flat ground is the most southerly of a whole network of plains and valleys, all of which, with the exception of the Karova itself, drain into the main central valley of Tekirambar. The most important of these plains on the north is that of Milas, separated from the Tekirambar plain by a low rise, over which passes the main road from Milas to Budrum. The Tekirambar plain itself is almost quite level except for one or two isolated hills lying between the two main drainage channels, the Sary Chai on the north and the Gaidarez Chai on the south. The latter, before entering the plain of Asyn Kale, flows through a lake which was formerly an arm of the sea but is now separated from it by a belt of alluvium.

The depression already referred to, which runs from Milas to the south coast at Gereme, is an undulating belt varying in height from 300 to 1,000 ft. Along the strip where it falls to the coast a few streams dry in summer form the only small delta plains to be found along this shore. The largest of these streams is the Kartal Dere. Between the lower valley of the Kartal Dere and the coast a limestone ridge rises to a height of 1,870 ft. Its southern side forms a continuous wall towards the sea. Behind the Bays of Chamalty and Akbuki it falls to a saddle of about 800 ft. altitude.

On the eastern side of the Milas-Gereme depression and north of the lower Kartal Dere the country rises at first in terraces and then in steep continuous slopes to the highland of which the Gaidarez Dagħ, Marishal Dagħ, and Penjik Dagħ form the chief mountain groups. Seen from the west this highland region has the appearance of a long bare grey wall of rock. The view from the north and east is very similar, except that the slopes on these sides are less abrupt. The



PLATE II



COASTAL RANGE EAST OF GEREME

(To face p. 35)

interior of the highland appears to be a rocky undulating plateau lying between 3,600 and 5,000 ft. It seems to be entirely destitute of roads and uninhabited except for a few hill villages at its south-eastern corner. There is possibly a depression running across it from west to east: on the former side the valley of the Kay Dere, on the latter a valley system opening north-east to the upper China plain at Geringözler. On its northern side the boundary is a lower strip traversed by the Milas-Mughla chaussée and separating this upland region from the Aksivri Dagħ. On this side, at the western end, lies the small round plain of Duz Ova (alt. 1,400-1,500 ft.) with no drainage outlet, and to east of this the chaussée rises over a pass of 2,300 ft. to descend gradually past Eskihissar and then more abruptly to the upper China plain. On the southern side the highland falls steeply to the wild narrow valley of the Kartal Dere, between which and the coast run two ridges. The northern of these is broken into rugged slopes by several small valleys and reaches in the Sivri Dagħ a height of 3,600 ft. The southern ridge, called Kiran Dagħ, attains an altitude of over 3,300 ft. and falls precipitously to the Bay of Giova. Through the depression between the two ridges runs the little-used road from Gereme to Mughla (see Route 186).

2. Corresponding to the promontory of Budrum on the south side of the Gulf of Kos is the much longer and narrower peninsula extending from Cape Krio on the west to the Bay of Erine on the east. Much the broadest and highest part of the peninsula is the extreme western block, which stretches for 18 to 20 miles from Cape Krio to Dacha Bay. Here two main parallel limestone ridges with steep peaks may be distinguished running east and west. The northern ridge rises steeply from Tekir Bay to a height of 2,580 ft. and increases in altitude farther east to summits of 3,575 and 3,850 ft. On the north this ridge falls steeply to the water's edge except at the western end, where there are small coastal plains along the Bays of Mordala and Mersinjik. The southern ridge begins at Tekir Burun and before long attains a height

of 1,800 ft. At this end it is broken by valleys, some of which debouch on small plains. Eastwards it broadens out and reaches an elevation of over 2,600 ft. The depression between the two ridges is on the west formed by a fairly broad valley and rises to the east over a series of cols, of which the highest is 1,385 ft.

On the east the ridges fall to a belt of partly cultivated low ground which extends from Keörmen Liman on the north coast south-east to Dacha Bay and along the north side of the latter. The ground north of this belt is occupied by a low line of hills 600–700 ft. high, which, however, rise at the western end above Shahyn Burnu to over 1,100 ft. and at the eastern end above the village of Emejik to about double that height. This part of the peninsula is at its narrowest only about  $1\frac{1}{2}$  mile across. East of Emejik the heights last referred to sink again to undulating ground, which continues eastwards at something over 1,300 ft. altitude as far as the narrow isthmus between Murdubeg Bay and Benyik Bay. The height of the ground across this isthmus is barely 400 ft. and the breadth rather under a mile.

From the isthmus east to the Köijigez Lake the country north of the line Erine Bay–Küchük Karaghach shows an undulating surface with a general elevation of 1,000 to 1,300 ft. It rises in the crest of Balym Dagħ on the north to 2,000 ft. or more and in the east to over 1,600 ft. in the Balan Dagħ. The formation is almost entirely serpentine, and, as is usual in such formation, the summits exhibit no striking features. Mention should, however, be made of a belt of limestone running north and south between Mermeris and Giova Bay, which, though of the same general level as the rest of the country, rises to a peak in Altynsivri (alt. 1,500 ft.). South of the line Mermeris–Küchük Karaghach the serpentine rises above the level already indicated. Thus the block which ends in Chatal Burun reaches an altitude of nearly 2,300 ft., and that between the Bays of Karaghach and Ikinjik attains 2,700 ft. or more. The surface of the whole of this area is much broken by easy winding valleys, many

of which are not shown on the maps. It is largely covered with pine woods except along the coast, where the forest has been replaced by maquis. Here also is practically the only cultivation in this district, in small plains such as those of Mermeris or Karaghach.

Of totally different character from the region outlined in the preceding paragraph is the peninsula jutting out between the Bays of Erine and Mermeris towards the island of Rhodes. Here the formation is mainly limestone, the surface much more irregular, and the heights more rocky and sharply defined. The greatest elevation is reached in an unnamed mountain between the Bay of Erine and that of Mermeris. From a height of 3,600 ft. this summit falls on the west to a general level of 600–700 ft. and on the east to 1,000 or 1,300 ft. The central part of the peninsula has an average elevation of 1,600 or 2,000 ft. with summits rising to 2,600 ft. The south-western end, with the peninsula of Phiniki (or Dorakia), lies generally between 1,000 and 1,300 ft. with summits reaching nearly 1,800 ft., and falls in the middle to a rocky isthmus of 300–400 ft. in height. On the other hand in the peninsula of Bozburun the altitude sinks to 700 ft. or less. The coast is everywhere deeply indented with bays and creeks, and the lower parts of the valleys which open on to these widen out to small plains. These plains and a few patches in the generally waterless interior of the peninsula are in places provided with springs and capable of cultivation.

The easily undulating serpentine district described in the last paragraph but one sinks on the north to the valleys of the Arablar Chai and Namnam Chai and passes over, in a low col which parts the waters of these valleys to the Bay of Giova and the Köijigez Lake respectively, to the slopes of Sandras Dagħ on the east (see below, p. 40). The second of the two rivers just mentioned empties itself through an alluvial, partly marshy, plain into the Köijigez Lake, the bed of the latter being merely the lowest part of an alluvial depression which extends from the lower Namnam Chai



valley down to the sea between Ikinjik Bay and Cape Sphina. This marshy depression is flanked on the north-east by a belt of the serpentine which projects in spurs into the flat ground and appears also in isolated hillocks rising out of it. It is drained by the overflow from the Köijgez Lake and by the delta of the Dalaman Chai. The two drainage channels are separated by the broken limestone mass of Baba Dagħ (alt. 2,050 ft.), of which the spurs on the west side of the Köijgez outlet, which rise to 2,000 ft., and those on the east side of the lower Dalaman Chai, which have a somewhat lower altitude, may be regarded as outliers.

#### *The Central and Eastern Karian Highland*

This section includes that part of the Karian mountain country not dealt with in the two preceding sections. That is to say, it has roughly the shape of a triangle, of which the apices are Eskihissar, the Badem Dagħ north of Dalaman, and Denizli.

On the eastern side of the upper China valley the ground rises in broad steps from a height of 1,100 ft. to about 2,000 ft. Behind this the mountains rise in a group of round summits and ridges running roughly from north-west to south-east. Two main chains may be distinguished.

The first of these chains begins on the north with the limestone ridge of Shaban Dagħ (alt. nearly 5,000 ft.) and continues south-east in a number of summits, between which deep gorges run south-west to the upper China valley. On the west of these summits the limestone projects southwards with an elevation of between 4,000 and 5,000 ft. to fall steeply to the Mughla plateau (alt. 2,600 ft.). On the south-east the summits reach their greatest height in Üyüklü Tepe (alt. 5,900 ft.), a steep pyramid-shaped mass falling on the west in a precipitous rocky wall to the lower ground running up from Mughla. South of Üyüklü Tepe a ridge of similar formation continues south-east till it merges in a broad unexplored limestone plateau 3,600-4,300 ft. high.

The most northerly summit of the second chain is Eli Dagħ

(alt. 5,250 ft.), which falls on the north to the Aivanly Bel pass (alt. 3,200 ft.). South-eastwards the ridge attains its most striking summit in Gök Tepe (alt. over 6,200 ft.). The greatest altitude of the chain is reached in an unnamed summit south-east of Gök Tepe.

On the north-east Gök Tepe slopes to a Karst-like or broken limestone region drained by underground channels. This region varies in elevation between 3,300 and 5,000 ft., above which rise various rounded summits. Between it and the upland plateau of Davas lies a belt of high ground which connects itself on the north with the mountain system already described on p. 32 and on the south with the unexplored limestone plateau east of Mughla. It is broken near Balania by the Perdik Chai and at this point divides the hilly depression of Kinik from the Davas plateau. South of the Perdik Chai break the high belt reaches a height of about 4,000 ft. About 10 miles farther south, before it merges in the limestone plateau referred to, it is broken again, this time by a number of streams forming the head-waters of the Möndevé Chai. At this point it divides the upland plain of Yemisen (alt. 3,600–4,000 ft.) from the plateau of Davas.

*The Davas Plateau.*—By the Davas plateau is here meant the whole of the upland depression drained by the upper waters of the Ak Chai and its tributaries. The depression has roughly the form of a quadrilateral whose sides are indented by spurs of the surrounding mountain rim. It varies in breadth from west to east between 15 and 25 miles, while the length from north to south is about 30 miles. The northern half of the depression is the lower. Here the Yolalty Narly runs up from the north-west with an elevation of 2,000 to 2,300 ft., falling to the west, on the left side of the Ak Chai, to about half that height. The Yolalty Narly merges in a level plateau of about 3,000–3,300 ft. altitude, which is divided from the north-eastern portion of the depression by a low rise, hardly distinguishable from the general level of the plain, running northwards from the Chapas Dagh. On the east side of this lies the main plateau, the Davas

Ovasy, an almost level plain with an average elevation of about 3,000 ft., which to the north, below the Buba Dagħ, rises to 4,000 ft.

The area described in the foregoing paragraph ends on the south with the break formed by the lower valley of the Deli Chai and the Teina Dere. The part of the depression south of this line is distinguished from the northern not merely by its general higher elevation but also by the broken character of its surface. The numerous tributaries of the Ak Chai divide it into table-lands of varying altitude. Thus the heights along the Ak Chai north of Irmak Köprü rise from about 2,000 ft. at Körteke to 2,600 and 3,000 ft. higher up the river. East of the river the general level is about 3,300 ft., while the Chapas Dagħ behind Davas reaches nearly 4,000 ft. Farther south the ridges in the Irmak district lie at about 3,600 ft., while south-eastwards, round Eskere, they sink again to about 3,300 ft. To the east of the Eskere plain the ground rises in steps to the Boz Dagħ.

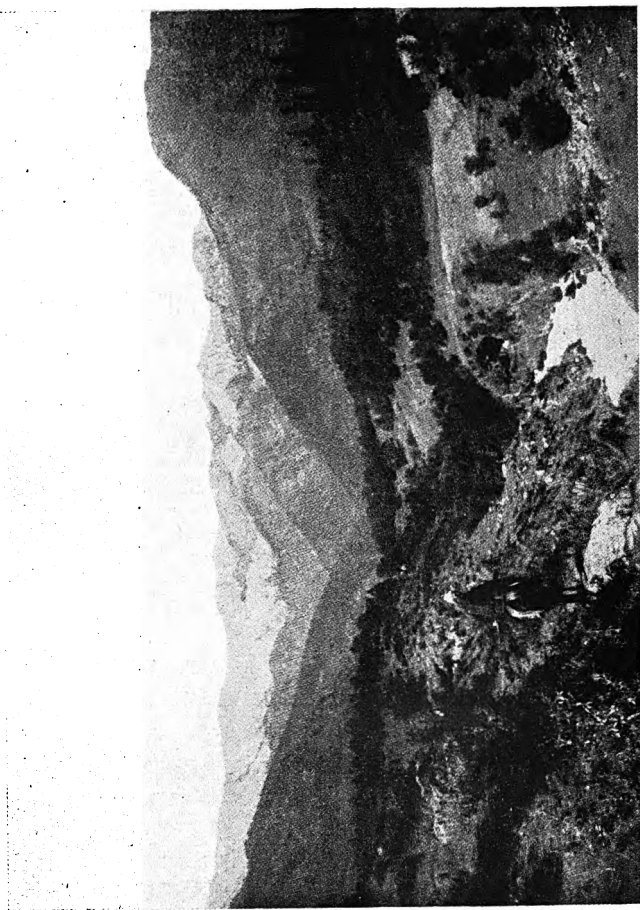
*The Mountain Rim of the Davas Plateau.*—The western side of the mountain rim surrounding the plateau of Davas has already been dealt with (see above, p. 39). There remain still to be described the Sandras Dagħ on the south, the Kara Dagħ, Boz Dagħ, and Akche Dagħ on the east, and the Avdan Dagħ, Chibukly Dagħ, and Buba Dagħ on the north.

The extensive mountain block which culminates in the buckler-shaped summit of Sandras Dagħ (alt. 8,200 ft.) is practically unexplored. From the side of the Davas plateau it rises gradually to the summit as a gently undulating highland. To west and east it falls in steps to the valleys of the Namnam Chai and Dalaman Chai respectively, while on the south it drops in two terraces to the plain of Yüksekum.

The three mountain masses on the east of the plateau have also been little explored. All are of limestone formation and rise with fairly steep unbroken slopes to broad undulating Karst-like plateaus broken by single round peaks. It is estimated that the Kara Dagħ reaches heights of 4,200 to



PLATE III



KARJY DAGH (BUBA DAGH)

(To face p. 41)

5,000 ft., the general level of the Boz Dagh about 6,500 ft. with summits to 8,200 ft., and that of Akehe Dagh something under 7,000 ft. All three mountain blocks are little broken by valleys, the only exception being the northern slopes of Boz Dagh. Besides forming the eastern rim of the Davas plateau and dividing it from the upland plain of Ajy Padem to east they enclose the plateau of Bars Ova (alt. 3,300 ft.), a fertile alluvial plain about 7 miles from north to south with a breadth of about 4 miles. This plain has no outlet for drainage, and its surface is broken by isolated limestone hills.

To come now to the mountains bordering the Davas plateau on the north, some mention has already been made of the Karynjaly Dagh and Avdan Dagh (see above, p. 32). The remainder of the mountain block on this side begins with the rounded wall, about 7 miles broad, of the Chibukly Dagh, the crest of which keeps a fairly uniform level of 4,600 to 5,000 ft. and rises farther east to summits of 5,900 ft. The slope towards the north is steeper than those to the west and south. The watershed lies nearer that side of the range, and the streams running to the Maeander valley have cut deep canyons in the lower slopes. On the north-west the latter project into the valley, leaving a pass hardly a mile broad for the Maeander to traverse. This pass was important in ancient times as the frontier gate between the western coast-lands and Phrygia. On the south-east the main mountain mass unites with a marble ridge whose northern slopes are broken by numerous valleys. The breadth of the range now is about 10 miles, and here it rises to 7,600 ft. in the steep pyramidal peak of Buba Dagh (Beshik Kaya), from which this part of the range takes its name. The crest now falls nowhere below 6,500 ft. and broadens eastwards to the plateau of Gerziler Dagh, which is dominated by the somewhat higher peak of Karjy Dagh (alt. 7,500 ft.), and sends spurs out southwards to join the rounded massif of Avdan Dagh. East of Gerziler Dagh the range contracts to about 5 miles or less and continues in a series of summits,

Fyndyk Dagħ, Bedre Dagħ, and Topalan, varying from 3,300 to 5,500 ft. The slopes in this part of the range are not much broken by valleys.

*The Khonas Dagħ and the Hills to East and South-east*

Mention of the Khonas Dagħ and the hills north of Lycia may be made here, although they fall outside the boundaries of Karia. Khonas Dagħ is closely related to the mountain system just described, being separated from Topalan on the west only by the Baghyrsak Dere, up which runs the famous road from Denizli to Adalia, and from the Akche Dagħ to south-west by the Kazyk Bel, which that road crosses to descend into the plain of Kara Öyük Bazar (see Route 202 in the present volume and Route 11 in Vol. III, Part 3). The mountain is of limestone formation and measures about 10 miles from west to east, by 8 miles from north to south. It rises in gently sloping foothills on the north. The mountain-walls on the west, north, and east are steep, and the top is a broad ridge of horseshoe shape (alt. 6,500–8,200 ft.) opening northwards by a valley running down east of Khonas. Other smaller valleys break the northern slopes into spurs. The southern slopes on the other hand are very little broken.

No detailed general description of the hill country to east and south-east of Khonas Dagħ is available. It is, generally speaking, a broken mountainous region with high-lying pasture-lands gradually sloping down to the three lakes, Chorak Göl, Salda Göl, and Yarashly Göl. On the south the hills fall to the long valley of the Gebren Chai, which drains northwards into the Buldur Lake and of which some description has been given in Vol. III, Part 3, of this handbook.

#### FIFTH ZONE

Hitherto we have been concerned with the structure of the west of Asia Minor as determined by the mountain system in its ramifications towards the seaboard. We have now to deal with that part of the region covered by this handbook which lies inside the mountain rim. In places the boundary between this, the plateau region of our area, and the zones already

described is sharply defined. Thus on the north Mt. Olympus, the Dumanich Dagh, the Egrigöz Dagh, and the system south of the upper Simav Chai (the ancient Temnos) form clear-cut barriers, while on the south is the bold bastion of Khonas Dagh and the mountains of Lycia. But between these barriers the plateau stretches outwards in bays into the mountain masses and in particular sends out to the west between Temnos and the middle and upper Maeander valley a broad tongue of rolling country, which can hardly be reckoned part of the mountain system but which forms a kind of transition region from the western seaboard to the central plateau. It will be seen that this region has certain features which distinguish it from the plateau properly so called.

The greater part of the plateau zone consists of plain or rolling undulations. Here and there, however, the general level is broken by ridges and summits, which in one or two cases, such as Murad Dagh or Ak Dagh and its outliers, constitute extensive massifs. Generally speaking, such elevations do not form serious barriers to communication, which is much more affected by the rivers. These, particularly in the transition region just referred to, cut for themselves gradually deeper and deeper channels till they become canyons with almost perpendicular sides 200, 300, or even 1,000 ft. in height.

#### *The Plateau North of the Latitude of Kutahia*

Here the average elevation of the country is about 3,600 or 4,000 ft. Below this level lie a number of plains, some of considerable size. Among these may be mentioned the plains of Tavshanly (alt. 2,600–2,800 ft.), those of Ören Köi and neighbourhood (about 3,350 ft.), that of Kutahia (alt. 3,000 ft.), the plain south of Tutluja (alt. 3,000 ft.), and that of Dumanich (alt. 2,600 ft.). All these plains are but little sunk below the level of the surrounding plateau, not more than 1,000 ft. at most.

The only valley systems to be considered for this district are those of the Tavshanly Chai and Porsuk Chai, which drain it from south to north. Both of these rivers so far as they



lie within the present zone flow with slow current in shallow beds. The rest of the streams carry little water, though few of them are actually dry in summer, and the valleys are not deep. Generally, however, the valley-sides are steep, and the watersheds almost imperceptible. Where the rock formation is serpentine, however, the canyon form gives place to the V-shaped valley, and the watersheds are formed by rounded ridges of approximately uniform elevation.

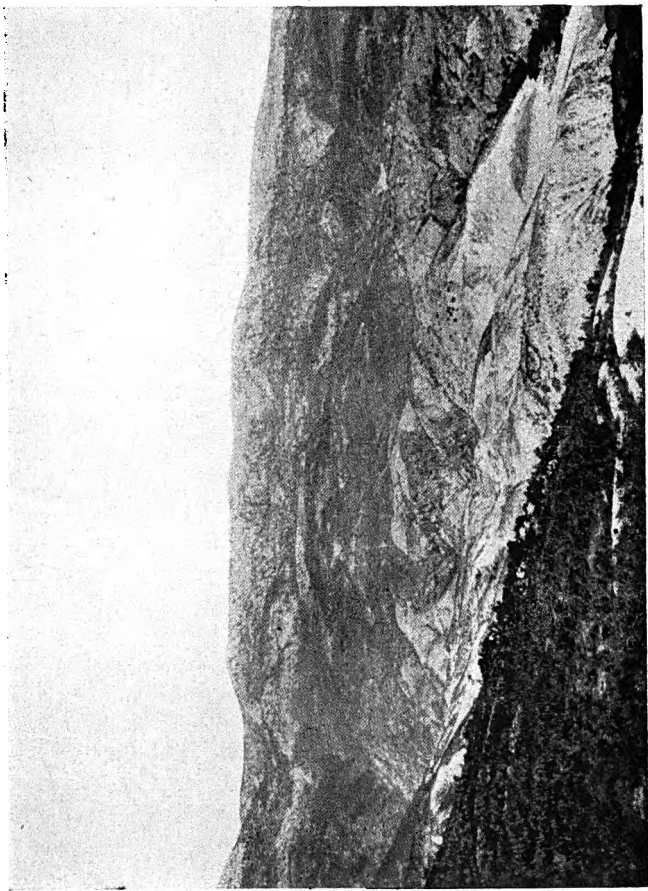
*The Plateau South of Kutahia as far as the Line Ak Dagh-Murad Dagh-Afiun Kara Hissar*

South of the line Emed-Tavshanly lies a little-explored part of the plateau. At the western end this area passes over in a narrow belt between Döshejik Dagh and Ak Dagh to the head-waters of the Gediz Chai. On the south-east it is bounded by the Döshejik Dagh, which appears to be a broad flat mountain mass (alt. nearly 5,600 ft.), and east of the latter the plateau begins again in the Chavdyr Hissar district (alt. 3,000-4,000 ft.), the surface of which is dominated by several summits of marble formation. Lying within this portion of the plateau are the undulating plains of Doghanjylar, Kyrova, and Chavdyr Hissar, drained by the upper waters of the Tavshanly Chai. To north-east this district runs up to the Ajem Dagh behind Kutahia, the western part of which is broad and flat but dominated by several summits, while the eastern ends in two crests reaching nearly 5,600 ft. The plateau here is broken by numerous small valleys. On the south the boundary is the Jibrail Dagh, also a broad flat mass (alt. about 5,250 ft.). The latter sends up spurs of lower elevation to the north and separates the Chavdyr Hissar district from the Geregi plain, south of which the plateau rises again to the Abia Dagh.

Between Döshejik Dagh and Jibrail Dagh a low rise separates the Chavdyr Hissar district from that of Gediz and also forms the watershed between the Rhyndakos and Hermos, that is to say, between the Sea of Marmara and the Aegean. On the south the ground falls sharply to an altitude of 2,600



PLATE IV



THE SOUTHERN SLOPES OF AK DAGH NEAR GEDIZ

(To face p. 45)

or 3,000 ft. round Gediz. To south of Gediz and to west of it towards Simav the plateau continues on the south side of Ak Dagħ with a general elevation of 3,600 to 4,000 ft., while to the north it connects itself with the Emed district by the belt, already mentioned, which lies between Döshejik Dagħ and Ak Dagħ.

Flanking Gediz on the west is the Ak Dagħ, and to east, at somewhat greater distance, is the Murad Dagħ. The former consists of a main broad-backed ridge running west-north-west with a rather lower but broader ridge to south of it. The valleys are of the V-shape, with a gentle fall near the head, which becomes steep lower down. The highest summit of the mountain attains a height of 6,870 ft. From it a magnificent panorama of the surrounding country may be obtained : westwards over the Simav district to Uluz Dagħ ; north to Egrigöz Dagħ and the plateau east of it ; north-east to Mt. Olympus ; east to the outstanding masses of Jibrail Dagħ and Murad Dagħ ; far to south over a wide expanse of rolling country with the higher plateau of Takmak dominated by Akhmedler Dagħ and Omurbaba Dagħ, and even beyond to the mountains above Denizli ; to south-west over another expanse of table-land, out of which rise volcanic groups, Yaghjy Dagħ, As Tepe, and the cones round Kula ; and farther still to the Boz Dagħ (anc. Tmolos).

The Murad Dagħ is very similar in form to the Ak Dagħ. The mountain rises steeply with almost unbroken slopes from the north to a long crest running east and west. The crest itself is broad and gently rounded, and only flat summits rise above the general level. Shallow V-shaped valleys break it into undulations. South of the crest a valley running west divides it from a parallel ridge, which on the east unites in a broad plateau of nearly 7,000 ft. elevation with the main ridge. On the south and south-west the mountain falls in spurs to the transition plateau region.

The depression of Chukur Ören, which on the north separates Murad Dagħ from Jibrail Dagħ and Abia Dagħ, is drained westwards by the Murad Su and eastwards by the Uysular

Chai. The latter also receives the drainage of the Aghach Kõi plain to south-east and at the northern end of the plain turns north. Here it breaks through a spur of Ablak Dagħ and near Abia enters plateau country (alt. 3,600–4,000 ft.). From Ada Kõi south-eastwards this portion of the plateau is occupied by the long plain of Altyntash Ova drained by the Porsuk Chai. On the north it connects itself with the country round Geregi and continues north in a narrow belt between the hills behind Ada Kõi on the one side and Omerbaba Dagħ on the other into the Kutahia plain. Through the narrow belt the Porsuk Chai has cut a canyon. The hills just referred to, those of Ada Kõi (alt. 5,080 ft.) and the long line of Omerbaba Dagħ (alt. 5,000 ft.), rise in small summits. On the east Omerbaba Dagħ falls again to a plateau (alt. 3,600–4,000 ft.) drained by the Akchemesjid Su. On the south an eastward spur slopes to the small plateau of Sevdi Kõi (alt. 4,000 ft.), which falls south-west to the Altyntash Ova and in that direction is cut by a number of broad valleys which divide it into slight elevations. South of Sevdi Kõi rises the gently rounded wall of Elmaly Dagħ (alt. 5,100 ft.), from which the ground falls again to the Altyntash Ova and the plateau of Eiret (alt. 4,000 ft.). The latter is also broken by broad valleys into gentle undulations. South-west of it rises another rounded mountain mass, Elbilak Dagħ (alt. 5,000 ft.), which to west slopes to the Aghach Kõi plain lying between the spurs of Murad Dagħ, Abia Dagħ, and Ablak Dagħ, on the south-west sinks to the easy watershed separating the streams of the Porsuk Chai, Dolai Chai, and Banaz Chai, and on the south falls to the valley of the Dolai Chai; the southern edge of the latter opens in a gap to the long narrow plain of Sychanly Ova. At its south-eastern end Elbilak Dagħ joins on to the hills round Afiun Kara Hissar. The general level of the latter is about 4,000 ft., but a number of summits rise above this.

The most extensive plain in the portion of the plateau here described is the Altyntash Ova. It runs from the north side of the Kyzylja Derbent for a distance of about

30 miles north-west to Ada Kõi with a maximum breadth of 6 miles. The level varies from about 3,600 to 3,350 ft. On the north-west a broad flat corridor connects it with the Geregi plain. The greater part of the Altıntash Ova is drained by the Porsuk Chai.

*The Transition Region of the Plateau*

*The Area Drained by the Gediz Chai and its Tributaries.—*

This region may be considered as extending from the edge of the Akhissar-Mermere depression on the west to the line Murad Dagħ-Ushak-Alashehir on the east.

On the north along the foot of Temnos the country is little known. The general level appears to be about 2,600–3,000 ft., with single summits to 4,000 ft. To south-west this general elevation sinks to about 2,000 ft. round Yagyrdy, where the steep rugged mass of Shahankaya dominates the surrounding gentle slopes and terraces from a height of over 3,000 ft. From the Yagyrdy district to the edge of the slope above the Mermere depression the surface appears to be a plateau of only 1,600–1,300 ft. elevation commanded by a few heights reaching 2,300 ft. Eastwards from here to Adala the hills form a plateau rising in a few undulations to 2,600 ft. and in the ridge east of Górdiz to 3,300 ft.

The extensive plateau drained by the upper tributaries of the Gediz Chai exhibits considerable variations in level. Round Demirji it is about 2,600 ft. ; east of As Tepe it reaches approximately 3,000 ft. and at the foot of the latter 3,600 ft., the mountain itself rising to nearly 5,000 ft. This relatively high region falls to depressions on the west and south. On the west along the Demirji Chai valley the upper level is only 2,600 ft., and in general the ground falls below this in broad terraces to equally broad valley-bottoms with a level of 1,300 ft. A somewhat similar character of surface is found to east between the valley systems of the Alaghach and Ilgi Chai, the 2,600 ft. level being preserved here in only a few places. East of this the broad volcanic mass of Yaghjy Dagħ (alt. 4,250 ft.) and a number of serrated rocky heights (Iralty

Dagh, Ikili Tash, Chatal Tepe, &c.) dominate the surrounding country. These form a chain, broken by deep gaps and valleys, which runs south-east into the plateau and thus divides it into a western and an eastern part.

The former of these divisions rises from an altitude of 2,600–3,300 ft. from Yenishehir in the Gediz Chai valley via Selindi, Yaila Dagħ, and Uzungözü Dagħ to As Tepe. On the north it falls steeply to the lower district between As Tepe and Yaghjy Dagħ. To south-west the slope is gentler, and the level falls to about 1,600 or 1,300 ft. round the confluence of the Gediz Chai and Demirji Chai. At this south-western corner lies the Borla plain (alt. 700 ft.). South of the Gediz Chai, however, the plateau-level rises again to 2,000 or 2,600 ft. in the volcanic district round Kula known as the Kata-kekaumene.

The eastern division forms the upper Gediz Chai basin, with a general level of 2,600 ft., and on its far side the plateau rises to a level of 3,300 ft. broken by several summits between Ushak and Akhmedler Dagħ. East of this it sinks again in the Banaz Ova (see below).

The hills from Adala eastwards form, like those to west of that place, a gently rounded plateau, which at first, on the west, has an elevation of 2,600–3,000 ft., and therefore lies very little above the plateau just described. Farther east the general level is higher, from south of Kula to the Kemer Dagħ 3,300–3,600 ft., dominated by Omurbaba Dagħ (alt. 4,250 ft.) and Kemer Dagħ (alt. 4,000 ft.). Then from Takmak to Chatal Tepe the level sinks again to 3,000 or 2,600 ft., the hills here therefore lying lower than the plateau between Chatal Tepe and Ushak. Seen from the north, however, they appear like a distinct wall, as the plateau round Sirge does not rise above 2,000 ft. The ridges east of Alashehir lie at 3,300–3,600 ft. and roughly at the same level as the Banaz Ova (for which see below).

To sum up, one may say that, excluding the region from the Mermere depression to the upper basin of the Kum Chai, where the level rises gradually from 1,300 ft., the surface of

the area here dealt with is a plateau varying from 2,600 to 3,300 ft. in elevation, stretching from the basin of the Kum Chai on the west and the Adala hills on the south to the Gediz Chai basin on the east, with depressions in the interior of that area and several more or less isolated massifs and summits dominating it. It falls on the south in a continuous, though not very steep, slope to the Alashehir Chai valley and shows a general rise to east and south-east. Round the edges where the hill character is most pronounced the surface is undulating and commanded by single rounded summits and ridges. The valleys here are winding and narrow, though not particularly wild. Enclosed within the hill belt the general level remains much the same, but the valleys are broad, with more or less steep sides. Where the ground rises it does so not gradually but in steps; the hills are flat-topped, and the dominating heights are volcanic masses rising either in rocky peaks or as broad buckler-shaped blocks.

*The Region Drained by the Upper Courses of the Maeander and the Banaz Chai.*—The greater part of this area is occupied by the Banaz Ova. Before this plateau is described, however, it may be well to give some account of its boundaries and the hill groups surrounding it.

On the south-west the Banaz Ova extends up to the foot of Omurbaba Dagħ and Kemer Dagħ, which rise above it here 700–1,600 ft., and runs up into the Akhmedler Dagħ group (alt. 4,250 ft.) east and north-east of Takmak. Between this and Ushak it is separated from the Gediz Chai basin by the rather higher belt of plateau referred to on p. 48 above. North of Ushak the western boundary is the Kyzyl Dagħ and the Elma Dagħ. The former extends as a broad block (alt. 5,000 ft.) westwards from Elma Dagħ, which rises steeply in a number of crests and reaches a height of 5,900 ft. Still farther north spurs from Murad Dagħ run down into the plateau, which here falls to the Jumburt Ova drained by the Banaz Chai.

The northern limit is now reached at the foot of Murad Dagħ. Between the south-eastern end of Murad Dagħ and



the hills south of Chiftlik Kõi lies the eastern boundary, the ground here rising in a well-marked step of about 700 ft. in height and 5 miles in length to the plateau described in the previous section (see above, pp. 44-7). This five-mile gap in the hill system round the Banaz Ova is a most important avenue of communication between east and west. At Tolumbunar, where it falls to its lowest point (alt. 4,145 ft.), it is crossed by the Smyrna-Kassaba railway (see also Route 171, mile 52½).

South of Chiftlik Kõi the south-eastern boundary begins. The hills south of that village rise to 5,900 ft., and are dominated by the summits of Ahar Dagħ (alt. 6,500 ft.) and Karshak Dagħ (alt. 6,050 ft.). The Porsuk Chai and Dolai Chai rise in the former. South of Karshak Dagħ another mountain group rises to a height of nearly 6,000 ft., falling on the east to the Sandykly plain. The Aram Chai drains this group from north to south, and a belt of plateau about 200 ft. above the Banaz Ova lies along its western foot from Ahat Kõi southwards to the Sandykly plain and along the southern end of the mountains above the latter. South-west of this and projecting northwards into the Banaz Ova lies the long uniform mass of Burgaz Dagħ (alt. 5,000 ft.) separated from the broad massif of Ak Dagħ (alt. 8,200 ft.) by the valley of the Chufu Chai. Burgaz Dagħ and Ak Dagħ fall steeply on the south to the marshy but fertile plain of Chivril, in which the plentiful head-waters of the Maeander coming from the east unite with the Chufu Chai, which is dry in summer. This plain of the upper Maeander lies at an altitude of 2,700 ft. and only about 300 ft. lower than the neighbouring portion of the Banaz Ova, from which it is separated by a narrow belt of plateau reaching a height of 3,600 ft. The pass across this at Sivri Tepe is about 3,270 ft. high. A few summits rise about 300 ft. above the general level. Then on the south-west comes the similar district of Chal, lying between the Banaz Ova and the Chivril plain and bounded on the north and south by parallel limestone ridges running from north-north-east to south-south-west, the Chal

Dagh (alt. 5,250 ft.) on the former side and Hoirasly Dagħ (alt. 5,600 ft.) on the latter. On the south-west this district is bounded by a hill belt which in Chökeles Dagħ (alt. 5,000 ft.) sends a spur out to the south-west. Between these boundaries the Chal Ova lies at a height of 2,600–3,300 ft., or roughly at the same level as the Banaz Ova and the Chivril plain. A few limestone summits rise out of it. Through the gap on the south-west between the hill belt culminating in Chökeles Dagħ and the southern extension of Hoirasly Dagħ the Maeander enters the Chal Ova, here turning north-north-west and making its exit through a similar gap on the north. At the south-western end of Chökeles Dagħ lies the flat-topped Chukurja Dagħ, with which the hills bounding the Banaz Ova come to an end, and the country falls in steps to the valley of the Chürük Su (anc. Lykos).

The Banaz Ova itself, which lies within the limits just described, has a length of about 75 miles and a width varying from under 10 to over 30 miles. Seen from a distance the surface of this area appears as an expanse of level plain, white in colour, or red where the ground is sandy. It is, however, cut by a number of streams, whose beds as they approach the south-western end form deep canyons. Moreover the surface is not of uniform elevation but rises and falls in very gentle undulations. There is a general rise from south-west to north-east. From the former end the ground rises in steps to a height of about 3,000 ft. on the right-bank side of the Maeander and to quite 3,300 ft. on the left. Then the country sinks to about 2,100 ft. around Güllü and to 2,300 or 2,600 ft. on the east side of the Banaz Chai. Farther north the elevation rises again as the plateau reaches its broadest portion. Across the line Inei-Sivasti the height is about 3,200 ft. in the middle, sinking to about 2,500 ft. at the edges. Still farther north, along the line Ushak-Sivasti, the general elevation is about 3,000 to 3,300 ft., the greatest height here also being about the middle, at the watershed between the Banaz Chai and Chamly Chai. From here the ground still rises gradually to a height of 3,300–3,600 ft., the plateau

meanwhile becoming narrower till it ends below Murad Dagħ, to which it rises in steps to 4,000 or even 5,000 ft.

*The Lykos Valley and the Country East of it as far as Dineir.*—The Lykos valley as it extends upwards into the rim of the plateau forms two shelves or terraces, the lower of which is practically continuous with the middle Maeander valley. Between the lower terrace and the upper the Tertiary foothills from north and south meet in a low ridge a mile or more in breadth, through which the stream flows in a narrow gorge with perpendicular rocky sides. The upper shelf is the Türkmen Ova, which runs due east, sloping from a level of about 1,200 feet to about 1,750 ft. At the eastern end there is a second step, where the slope rises in a rapid but uniform and easy gradient to 2,600 ft. in the Hambat Kyry.

The latter is part of a long depression extending from the plateau edge above the Türkmen Ova in a direction east by north towards Dineir, the eastern portion being occupied by the Ajy Tuz Göl. On the south the boundary is a more or less continuous chain of fairly high hills formed by Sügüt Dagħ, Gümüş Dagħ, and Yan Dagħ, the last-named a beautiful conical peak rising from the edge of the Ajy Tuz Göl to a height of over 6,000 ft. On the north the hills are at first lower and apparently more rounded in form. They fall on that side to the almost level plain of the Baklan Ova, which on the west is bounded by the hills overlooking the Lykos valley and drains to the Menderez Chai, the latter skirting it on the north at the point where it bends north to enter the Chal Ova.

East and south-east of the Baklan Ova the hills rise in a lofty and little-explored group formed by Beshparmak Dagħ and Maimun Dagħ. The former overlooks a belt of plateau, varying from 10 to 6 miles in width, which runs north-east from the Baklan Ova along the left-bank side of the Maeander to the Chivril plain. The latter rises with steep sides above the eastern end of the Hambat Kyry and the western end of the Ajy Tuz Göl, falling again farther east to low hills along the north side of the lake. The two groups together form

the south-western boundary of a considerable expanse of undulating grassy plateau lying at a height varying between 200 and 500 ft. above the Chivril plain and apparently merging, at the eastern end of the Ajy Tuz Göl, in a wide and fertile but little-cultivated plain called Taz Kyry.

The Taz Kyry is bounded on the east by a ridge which the main road from Khonas to Dineir crosses at a height of 690 ft. above the level of the lake, to drop down on the far side into the oval plain of Dineir. The ridge is simply a northern spur from the mountains to the south. Another northern projection of the southern mountain system constitutes the last massif to be mentioned in this chapter, the ridge formed by the Jebel Sultan and Samsun Dag, which bounds the Dineir Ovasy on the east and merges in the mountain block of Ak Dag above the Chivril plain.

Jebel Sultan, Samsun Dag, Ak Dag, and their northern extensions, Burgaz Dag, Karshak Dag, and Ahar Dag, which have been already dealt with (see p. 50), may be regarded as the boundary between the transition region of the plateau described in the last three sections (pp. 47 ff.) and the higher plateau farther east. But for its general lower elevation, the more accidented character of considerable portions of the surface, and the greater depth of the depressions included within it, this region as a whole might be reckoned part of the central plateau.

## CHAPTER II .

### RIVERS AND LAKES

Introduction—Description of rivers—Lakes.

#### INTRODUCTION

THERE are two main watersheds within the area covered by this handbook: (1) that between the Sea of Marmara and the Aegean; (2) that between the Maeander basin and the south coast.

Both of these run roughly from west to east. It follows that the general trend of the drainage to the Sea of Marmara is from south to north, and that to the south coast from north to south. The country between the two main watersheds is divided into two great depressions which the Gediz Chai and Menderez Chai drain west to the Aegean. The lie of the mountain ridges and the tilt of the general surface introduce important modifications in the direction of the rivers. Thus the presence of the coastal range on the north deflects the lower course of the Ülfer Chai westwards till it finds a gap in the range north of Mikhalij; and the structure of the Elmaly plateau on the south sends one of the two main branches of the Dalaman Chai far to the north till a rift in the mountain barrier allows it to turn south. Or again, the general surface-slope of the mountain country south of the northern coastal depression being on the western side from south-west to north-east and on the eastern side from south-east to north-west, the general trend of the rivers draining this mountain country is on the one hand to the north-east and on the other towards the north-west.

The river valleys themselves are of very varied character. Several of the most important rivers rise on the plateau and for a good many miles of their course have only a slight fall.

Consequently here they take winding courses, and the geological formation is often such that the valley-sides are abrupt, a characteristic which becomes more noticeable the greater the length to which the plateau country extends. And so it results, as e.g. in the case of the Maeander, that the valleys become canyons which constitute serious obstacles to traffic across the plateau. When once these rivers begin to break through the mountain rim enclosing the plateau the characteristics change. The V-shaped valley now is the rule, modified by particular types of geological formation and by the presence of valley plains where the mountains recede on either side. The courses of the rivers through the mountains are in many cases not accurately known, as the valleys are often impracticable even for pack-traffic. Details as to depth, speed of current, and the like are therefore frequently available only for the points at which roads cross the rivers.

The rivers of the west of Asia Minor have hitherto had practically no importance as waterways. A few of them, such as the Trojan Menderez Chai, the Gönen Chai, Ülfer Chai, and Dalaman Chai, are used for lumbering. Generally speaking, the currents are too strong and the depths too shallow to admit of upstream navigation. Exception must be made, however, in the case of a few rivers draining north. Thus the Susurlu Chai is practicable for kaïks up to Mikhaliç and was formerly navigable by small tugs to within a short distance of Sultanshehir. The Ulubad Chai, which drains into the Susurlu Chai, is navigable by sea-going kaïks, which ascend it to reach the Abulliond Lake. The Sakaria is also navigable for a few miles above the mouth. The most important river of the west, the Maeander, has a strong current and does not appear to be navigated. The only other stream used for navigation is that which drains the Köijigeç Lake. Sea-going kaïks ascend it in connexion with the timber trade.

More important than the use of the rivers as waterways is their employment in furnishing power for mills. Even quite

small streams are exploited in this way in the mountainous districts of the interior (see also Chapter IV, p. 84).

Water-wheels such as may be seen in Mesopotamia are little used for raising water from the rivers for irrigation, though some have been seen on the Porsuk Chai. Canalization is more common, though even this is not greatly developed.

Some details are added of a few of the most important rivers.

#### DESCRIPTION OF RIVERS

##### *Trojan Menderez Chai (anc. Skamandros)*

The head-waters of this river rise on the western slopes of the Haji Öldüren Dagħ. The river valley is divided into three fairly well-defined basins. The upper basin extends from the head-waters down to a narrow valley where the Yailajyk Dagħ on the north nearly meets the ridges which run down from the summit of Mt. Ida on the south. This basin, roughly 8 miles long by 3 miles wide, includes a great deal of undulating cultivated land chiefly on the south bank. Forestry here seems to be equally as important as agriculture. The middle basin, which extends from Bairamich to Ezine, is much more considerable, being 15 miles in length and averaging some 4-5 miles in width. This is in fact the most considerable and probably the richest plain in the whole of the Troad. A short distance below Ezine the river is spanned by a wooden bridge 400 ft. long called Sarymsak Köprü. It then passes through a narrow defile 3 or 4 miles in length cut through a limestone ridge averaging some 500 ft. above the sea. The stream then enters its lower plain, some 9 miles in length by 2 or 3 in breadth, known in history as the plain of Troy. This is wholly alluvial and in many parts marshy. The Menderez Chai here flows between well-defined banks, and the marshes are produced in most cases not by the river itself but by watercourses from the hills bordering the plain. As a result of the marshes the lower valley is probably of less economic importance than that of Bairamich. Opposite the

village of Kalafatly there is a wooden bridge 180 ft. long and  $16\frac{1}{2}$  ft. wide, and at the mouth of the river opposite Kum Kale there is another bridge  $328\frac{1}{2}$  ft. long.

*Chan Chai or Bigha Chai (anc. Granikos)*

The main upper waters of this stream rise in the hills north-west of Büyük Tepe Köi. A short distance below that place an important tributary, the Gülle Chai, comes in on the right bank from spurs of Mt. Ida to the south-east. The river now flows in a fairly open valley past Chan Bazar till, about 9 or 10 miles below the village last mentioned, it enters a narrow defile between oak-clad hills. This continues for 3 or 4 miles, when the river emerges into a flat valley, through which it flows to Bigha. The valley now opens out to a plain marshy in places, and 2 or 3 miles below Bigha a considerable tributary called Kara Atly Chai comes in on the left bank. This stream carries nearly as much water as the main river. At the point of junction it is 20-30 ft. broad, with steep earth banks 10-12 ft. high. The chaussée between Karabigha and Bigha crosses it by a wooden bridge.

Below the mouth of the Kara Atly Chai low hillocks about 80 ft. high approach the left bank of the river, separating it from an irregularly shaped lake called Eje Göl, which lies from  $\frac{1}{2}$  to 1 mile distant.

About 5 miles below the Kara Atly Chai another tributary joins, this time on the right bank. This stream is called Kojabashy Dere. It is apparently even more important than the Kara Atly Chai, but practically nothing is known of its course. Below this point the ground is open and level on both banks. Near the sea it is marshy.

The river is fordable everywhere except in flood.

*Gönen Chai (anc. Aisepos)*

This stream draws its upper waters from the drainage of the Avunia basin. The country here is open and undulating, with a fair amount of cultivation and some wood. A few



miles below Balia Bazar Kõi the hills close in, those on the left bank forming a continuous high range. The river in this part of its course is known as Akmak Dere, and the valley does not open out till about 15 miles lower down, when the plain of the small town of Gönen is entered. Some miles below Gönen the valley again contracts but remains fairly open till the river enters its marshy delta.

The Gönen Chai valley is of comparatively small economic importance at present as it carries no made road from the sea beyond the town of Gönen. The stream is everywhere fordable except in flood.

### *Avshar Chai and Karadere*

The course of this river is little known. It is formed by a number of streams draining into the Ivrendi basin, of which the most important are the Madaras Chai and Kenik Chai. These streams rise immediately on the north side of the Marmara-Aegean watershed and flow north-east into the Ivrendi basin, where they unite after receiving the waters of several other streams from the neighbouring hills. The Edremid-Balikesir chaussée crosses the river east-north-east of Ivrendi. The general course of the river continues north-east, and the valley, winding through wooded hills, does not apparently open out till the hills sink to the coastal depression. Here the river discharges into the Manyas Göl.

It reappears as the Karadere, which leaves the lake at its south-eastern end and winds eastwards to join the Susurlu Chai north of Mikhalij. From the lake to its confluence with the Susurlu Chai the Karadere is navigated by the Cossack fishermen of the Manyas Göl, but it has never been used for craft of any size. It is spanned by at least three bridges, the first two not far from its exit from the lake, the other some miles above its confluence with the Susurlu Chai. At the point where the first of these bridges crosses, the river is deep and muddy, with a breadth of about 100 ft.

*Susurlu Chai (anc. Makestos)*

The valley of this river forms a great depression which cuts through the greater part of the Mysian mountain country. The upper part of this depression runs somewhat north of west for about 50 miles and may be considered in several sections.

The first of these is formed by the Simav basin, in the western end of which the drainage of the neighbouring slopes collects to form the Simav Göl. Through the hills which form the western side of the basin the overflow breaks as the Simav Chai in a ravine, from which it emerges in a cascade.

Some distance lower the valley opens out to a second basin. This part of the valley is about 12 miles long by 2-2½ miles broad. Its sides rise in terraces of varying heights. One of these projects in a spur on the west side of the village of Yeniköi and closes this end of the second basin.

The third section of the depression now begins. It has the form of a broad trough, in which the river has cut its bed to a depth of about 1,000 ft.

A fourth section is the basin of Sındırgı, where the hills recede and the river-bed lies little below the level of the surrounding plain.

North of Sındırgı the river turns at right angles northwards down an alternately narrowing and widening valley. At Kepsut, where the valley widens to a plain, it receives on the right bank the most important tributary of its upper course, the Kille Su, which by a valley in general narrow and winding drains a depression roughly parallel to that of the Simav Chai basin up to this point.

From here to Susurlu, where the stream takes the name of Susurlu Chai, the valley is in general narrow. At Susurlu the river enters the plain of the great coastal depression, which it drains northwards with a general easterly trend till it meets the barrier of the coastal range. Here it receives on the left bank the important tributary already mentioned, the Karadere, and a little lower down the Ulubad Chai (see pp. 61-2) on the right bank. Sturgeon-fishing appears

to be carried on here. The river now breaks through the coastal range and enters the sea by a marshy delta.

The river valley in its course through the Mysian mountains is in general well wooded. Between Simav and Sindirgi the stream is bridged at several points. At the bridge north of Yeniköi it is about 15–30 ft. wide, with a swift current. North of Sindirgi it is fordable, at least in early summer. At Kepsut the river-bed is over 150 yds. broad and is spanned by a long wooden bridge. It should be fordable here also in summer, as considerably lower down in the neighbourhood of Azizie the water in the dry season is not more than knee-deep. From a little below Azizie to Mikhalij the river was a good many years ago rendered navigable for small tugs, but no work seems to have been done in recent years to keep the channel clear. From Mikhalij to the mouth the greatest depth in summer is about 6 ft. The breadth at the junction with the Karadere is about 50 yds., and the banks are about 10 ft. high. The current here is strong. At the mouth the width is over  $\frac{1}{2}$  mile.

The river is at its lowest in August. It is subject to sudden rises during rain or at the melting of the snows in the mountains, and flooding in the lower reaches has in the past caused considerable damage. Preventive measures against the periodic flooding of cultivable land in the coastal depression would probably be economically profitable.

*Balat Chai and Tavshanly Chai (anc. Rhyndakos)*

The courses of these two rivers, which together drain a great block of the Mysian forest area and unite before entering the coastal plain, are still very imperfectly known and are each known by different names in different reaches.

The main upper feeders of the former are the Inekullar Chai, Egrigöz Chai, and Balat Chai, all of which are formed by the drainage of a large number of streams rising immediately behind the watershed which bounds the Simav Chai basin on the north. The two first mentioned drain northwards and unite some miles west of Harmanjyk to form the Alaja.

Chai, which, on being joined by the Chardy Chai, then winds west for some miles till it is joined by the Balat Chai. The river now turns in a general north-north-west direction as the Balat (or Sinjan Chai) till, at the point where the valley begins to open out to the coastal depression, it is joined by the broader and deeper Tavshanly Chai.

The basin of the latter is even longer than that of the Balat Chai, though not quite so broad. Its upper stream is formed by the brooks which drain the Chavdyr Hissar plateau, from which it emerges to flow north-north-west as the Chavdyr Hissar Chai. Some miles south of Tavshanly the valley opens out to the basin in which that place lies. Up to this point, owing to the plateau-like nature of the country, the current is fairly slow, and the stream-bed is not deeply cut. From here the river begins to break through the rim of the plateau, and the valley deepens, still keeping the same general direction. The river is now known for a good many miles as the Tavshanly Chai. A few miles west of Dumanich its direction becomes west, with a general northerly trend. In the district of Beyje it takes the name of Adranos Chai, which it keeps till it joins the Balat Chai.

The united river now drains west-north-west into the coastal depression and turning north breaks through a last spur of the hills at Kirmasti. From here it winds through the plain into the Abulliond Göl, emerging as the slow-flowing Ulubad Chai at the north-western end of the lake.

No exact details can be given of the two rivers in their course through the mountains, the few points at which they are crossed by routes being too widely separated to form any basis of inference. In the mountain region the valleys in places contract to ravines, and, generally speaking, they divide the country into well-defined mountain groups and form serious barriers to traffic. Where the basins are more open they are generally cultivated. The rivers are probably generally fordable in summer and apparently continue so right down to their junction west of Kestelek. The currents as a rule are swift. At Kirmasti the united river is spanned

by a bridge 140 yds. in length. There is no evidence to show whether it is fordable here. It is subject to sudden rises in flood-time, which cause damage to the town of Kirmasti and the surrounding country. Near the Abulliond Lake the ground along the banks is very marshy. The last section of the river, the Ulubad Chai, is navigable by sea-going kaïks and is spanned at Ulubad by a bridge 400 ft. long (see p. 249).

### *Ülfer (Nilufer) Chai*

This stream rises a short distance north of Kelles and flowing north-west drains the mountain basin lying between Mt. Olympus and the northern watershed of the Tavshanly Chai in its middle reaches. In the upper part of its course through the mountains the valley is in general narrow but is cultivated in places. The stream is dammed some distance above Barakly to enable logs to be floated down, the water being allowed to escape when necessary. Where the river breaks through the mountains behind Brussa the course is not accurately known, and the valley forms a gorge. On emerging into the coastal depression west of Brussa the river assumes first a north-easterly and then an easterly direction through the Brussa plain. The banks here are marshy, and the stream receives several tributaries from the east and north-east. Almost due north of Brussa it bends north and then changes direction to west, which it keeps till it joins the Susurlu Chai. In this lower part of its course the stream divides the coastal chain into two ridges.

In the upper valley there is a bridge carrying the chaussée from Beyje to Brussa, and there are three others west of Brussa carrying the Kirmasti-Brussa chaussée, the Brussa-Mudania railway, and the Brussa-Mudania chaussée respectively. The last-named road and the railway recross several miles to north-west after the stream has assumed its westerly course.

No details are available regarding speed of current or depth.

*Sakaria Su (anc. Sangarios)*

The greater part of the course of this river lies outside the boundaries of the area covered by this volume. It receives, however, several important tributaries from our region. The chief of these, the Porsukh Chai, is described separately below. The Sakaria itself is here described only from the point where for some distance it begins to form the boundary between our area and the next to the east.

At this point the Kara Su enters on the left bank. The upper waters of this stream are formed by brooks draining into the Bozöyük basin, leaving which the river flows north, receiving as tributaries a large number of streams from both sides. From the Bozöyük plain to Pashalar, where it enters the Sakaria, the Kara Su valley is followed by the Anatolian railway.

Below Pashalar the Sakaria winds in a general north-westerly direction down a fairly broad valley. A few miles north-west of Lefke it turns north-east, here receiving an important tributary on the left bank, the Gökche Su (anc. Gallos). The latter draws its waters mainly from the basin of Inegöl, into which a large number of streams drain from the eastern slopes of Keshish Dag (Mt. Olympus), Dumanich Dag, and the hills farther east. From the Inegöl plain the Gökche Su traverses a fairly narrow valley north-east into the plain of Yenishehir, where it is swelled by several other tributaries from the neighbouring slopes. East of Yenishehir the valley again contracts, keeping the same general direction till the river enters the Sakaria. Between Yenishehir and the junction with the main stream it is bridged at several points where roads cross.

The Sakaria now follows a north-easterly course for a good many miles. The valley is narrow in places. It forms a rocky gorge for some distance above Mekeje, below which it opens out to a marshy plain. Below Geive it contracts again to a wooded gorge, the current becoming more rapid. Some miles above Adabazar the valley becomes more open,

and at the point where the Anatolian railway enters it the river is broad, muddy, and shallow, with a slow current. The banks here are low but steep, apparently of clay. Opposite Adabazar the breadth is about 120 yds. and the average depth (in May) 2 ft., with a current of 3 miles per hour.

There is very little information regarding the course of the river below this point. The current is said to be rapid, and the stream is much swollen in spring by the melting of the snows in the interior. There appears to be no local boat-traffic or fishing. The river is navigable in summer for small steamers for a few miles above the mouth. The average breadth for about 8 miles from the mouth is about 90 yds. and the depth 3 fathoms. At the mouth there is a bar, over which the depth is 3-5 ft.

Most of the bridges which cross the river in the section above described carry the Anatolian railway and are of iron resting on stone piers, with stone abutments. Opposite Adabazar in 1903 there was a wooden bridge, but from this point to near the mouth, a distance of nearly 45 miles, there is only one crossing, a ferry at Sinan Oghlu. There is a second ferry a short distance above the mouth for traffic on the coast road between Kandra and Eregli.

*Porsuk Chai (anc. Tembrogios or Tembris)*

The Porsuk Chai rises on the eastern side of the step which divides the transition plateau region west of Afium Kara Hissar from the western edge of the plateau proper (see pp. 46 and 50 above). For most of its course through the area covered by this volume it is a typical plateau river flowing with slow current in a valley not very deeply cut. After an easterly course for some miles from the source the river turns northwards, and about 8 or 9 miles below this point the valley opens out to the Altyntash Ova, through which the river flows in a general north-westerly direction between marshy banks. At the northern end of this plain it bends north and enters a canyon, through which the current is barely perceptible and slower than in the opener country

lower down. The canyon after some miles opens somewhat to a valley which in places becomes canyon-like in character. Then the stream enters the plain of Kutahia. At the Ak Köprü the valley narrows, contracting lower down to a winding canyon called Beshdeïrmen Boghaz. Here the stream flows swiftly between steep rocky banks which rise to about 700 ft. and are generally not more than about 300 ft. apart. The direction changes to north-east for some miles, and the valley opens out. Then the river takes an easterly course for some distance to resume the general north-easterly direction as far as Eskishehir. Here the river turns east again and keeps that general direction till it enters the Sakaria.

There are several important bridges on the river. One of these carries the chaussée from Kutahia to Afium Kara Hissar and is situated about  $6\frac{1}{2}$  miles south-east of Kutahia. A few miles lower down the Kutahia branch from the Anatolian line crosses, and some miles farther downstream, about 5 miles north-east of Kutahia, is the Ak Köprü, which carries the main road from Kutahia to Eskishehir. This road recrosses about 13 miles farther north-east by a fine Roman bridge, and again by a wooden bridge about 8 miles from Eskishehir. Between the first of the three bridges last mentioned and Eskishehir there are four others carrying the Anatolian railway. At Eskishehir there is another bridge crossed by the chaussée from İnönü.

During its course the Porsuk Chai receives a considerable number of tributaries. Most of these rise in gently sloping basins separated by flat almost imperceptible watersheds. Few of them carry much water in summer. The most important is the Akchemesjid Su, which after a course roughly parallel to the main stream enters it on the right bank at the south-eastern end of the Kutahia plain. The greater part of its valley is followed by the Anatolian railway. A second important tributary, the Felend Chai, comes in on the left bank in the Kutahia plain. A third feeder of considerable size is the Ashy Dere, the middle and lower valley of which is followed by the Anatolian railway.



*Bakyr Chai (anc. Kaikos)*

The main upper streams of this river rise on the slopes of Gyran Dag north of Gelembe at a height of about 2,600 ft. At Gelembe the main river is joined by several tributaries from the neighbouring hills, and thence its course lies generally south-west for about 5 miles in a deep narrow valley. It then turns almost west and enters the fertile plain of Kyrkaghach. Here it receives on the left two feeders, the upper from Elisler village on the hills to the south. The lower comes from the district of Bakyr at the south-western corner of the plain, from which locality the river takes its modern name. On the right bank it receives the Yamurly stream.

After a course of about 5 miles west through the plain the river turns north-west opposite Kyrkaghach. About 3 miles north of the town a considerable volume of water comes in on the right bank from two springs, the southern of which rises in the channel of an intermittent stream from the north. These springs have apparently a fairly regular flow and were regarded in ancient times as the sources of the Kaikos.

About  $1\frac{1}{2}$  mile below the springs the hills close in, leaving a valley only 1-2 miles broad. Flowing west-north-west down this valley the river at length turns west-south-west into the long fertile plain of Bergama. Near where it emerges finally into the plain it is joined on the right bank by a large stream from the north-east, the Akchavlar Chai. Lower down the Jumaly Dere comes in on the left bank. Farther west the river receives a good deal of drainage from the northern slopes, and then it bends south-west towards the hills on the south side of the plain. Near the edge of the foothills it is joined by the Karadere Su on the left bank. The river here is about 50 paces broad.

The valley now is considerably narrower, and the river runs with a swifter current along the foot of the hills on the south. The main tributaries come in on the right bank from the hills behind Bergama. Near Egrigöl Tepe the valley again widens and becomes more level. The tributaries which come in on

the right bank are sluggish and leave a large proportion of their water in the marshes which cover much of the north-western corner of the plain.

Lower down the river makes its way through slightly elevated ground. Beyond this rise lies the alluvial delta, formed within historic times, through which the river finally empties itself into the Euxine Gulf.

*Gediz Chai (anc. Hermos)*

The upper waters of the Gediz Chai are drawn from streams draining from the Ak Dag, Murad Dag, and Döshejik Dag. These unite in the Gediz depression, and the river then flows in a south-westerly direction through plateau country receiving as tributaries a number of fairly important streams. Near Yenisehir it breaks through a volcanic ridge and turns west, roughly parallel to, and at some distance from, the mountain rim enclosing the Katakekaumene on the south. Within this area the valley contracts in places where the geological formation is volcanic. At the western edge of the Kula district the valley again narrows as the river breaks through a northerly projection of the southern mountain rim before entering the Borla depression.

In its middle course up to this point the river receives from the north two important tributaries, the Selindi Chai and Ilgi Chai, the latter bringing with it the drainage of the Alaghach Chai and the Ahadlar stream. These two tributaries both take a westerly trend in their lower course similar to that of the main stream. The latter in the Borla depression is swelled by an important tributary from the north-east, the Demirji Chai, the direction of which it now assumes. After draining the southern portion of the Borla depression the river breaks through the mountain rim by a short narrow valley and at Adala enters the great depression which its lower course follows west to the western apex of the Manisa plain. The river follows roughly the middle of this depression, with many windings, generally between firm earth banks. The water is generally deep and muddy, and the current rapid.

Not far west of Adala a feed-channel takes off westwards to regulate the water-level in the Mermere Göl (see also below, p. 78). Some miles farther west the Alashehir Chai (anc. Kogamos) comes in on the left bank. This stream drains the upper part of the great depression above mentioned and is fed by numerous streams from the hills to north and south. A few miles east of Manisa the Kum Chai ('Sand River'; anc. Hyllös) enters the Gediz Chai on the right bank. This tributary rises in the highlands round Gördiz and by a narrow valley similar to that of the upper Hermos enters the plain of Ak Hissar. Here it receives the waters of the Gördük Chai (anc. Lykos) as well as streams from the Yünd Dag, and then breaks through a south-easterly projection of the latter into the Manisa plain, where it joins the main river.

The Gediz Chai now leaves the Manisa plain at its western apex by the narrow valley separating the Sipylös system from the Yünd Dag. Traversing this it enters the delta plain of Menemen. The river formerly took a general course south-south-west through the delta plain to the Gulf of Smyrna, but, as the frequent floods caused great damage to the neighbouring plain and as the silt brought down by it was rapidly blocking up the entrance to the gulf, the river-bed was in 1886 diverted northwards by means of a dike. The water now drains through a marshy lagoon into Agria Bay.

There are few details available regarding river-crossings. At the point where the road from Selindi to Takmak crosses the stream it is easily fordable, and no doubt the same is true of the course above that point. Some miles lower down there is a stone bridge carrying a road from Selindi to Kula. The river appears to be still fordable, at any rate in places, between this bridge and the Borla depression. There is another bridge  $5\frac{1}{2}$  miles above Adala. The course of the river for a considerable distance west of Adala is not accurately known. The stream is generally deep. It is fordable at least in autumn north-west of Salykhly. There is a ferry opposite Harmandaly east of Manisa, another north-west of Menemen, and a third south of Gören. It is

uncertain whether the chaussée from Manisa to Ak Hissar crosses by a bridge. The only bridge in this lower part of the valley of which there is information is the railway-bridge.

*Küchük Menderez (anc. Kayster)*

The Küchük Menderez collects its upper waters in the plain of Kelles from a number of streams draining the inner slopes of Tmolos and Messogis. Leaving the plain at its southern corner the river winds southwards through low hills down a fairly broad valley and then turns west skirting the foothills on the north side of the plain of Baliamboli. The valley now broadens as the twin systems of Tmolos and Messogis gradually recede. Some miles east of Ödemish the valley plain expands northwards, to contract again several miles west of that place. Here the river basin is broken into two unequal parts by outliers of Messogis. The main stream drains the northern and broader portion of the basin and turns southwards at its western end, where the ground begins to rise towards the Alaman Dagh. From north and north-west come several tributaries, and the ground in that direction merges over an almost imperceptible watershed into the plain of Jimovasy.

The plain now is marshy, and the river on reaching the southern end of the valley plain is swollen by the waters of the Bulukjy Chai, which collects the drainage of the basin lying between the outliers of Messogis already referred to and the main system. From this point its course is west-south-west down a valley, about 1 mile wide at its narrowest point, which separates the Alaman Dagh from the spurs of Messogis. In classical Greek times the river entered the sea near Ayasoluk, on the west side of which are the ruins of the port of Ephesus. As early as the first century of our era the alluvium brought down by the river had apparently formed a marshy delta extending several miles west of Ephesus and to within a short distance of the present coast-line.

There are few details available regarding current or crossings. Branches of the Ottoman line cross north of Tire and

Ayasoluk. Immediately above the latter of these bridges is an old stone bridge said to be the only one for ordinary traffic in the lower part of the river. The current here is rapid and the water muddy.

*Menderes Chai (Gk. Maiandros)*

The chief upper stream of the Maeander rises in a lake called Sheikh Arab Göl about a mile and a half south-east of Dineir. This stream issues in considerable volume from the lake and rushes down a ravine to the plain, where it turns with slower current westwards round a spur. There it is joined by a slow-flowing stream from the south, the Norgaz Chai (anc. Orgas), and the general course becomes north-west. A little lower down a stream about 800 yds. long (anc. Obrimas) joins on the right bank. It is fed mainly by a small marshy pool called Menderes Düden and probably carries more water than any of the other upper streams of the river. It is locally regarded as the primary source of the Maeander. On the south side of Dineir another strong stream, the Dineir Su (anc. Marsyas), comes in on the right bank, and on the west side of the town another stream comes in on the same side from some hot springs.

The course of the river is now west-north-west for some miles, into the marshy Chivril plain, and then west. Here it receives a right-bank tributary, the Chufriu Chai, which dries up in summer. The general direction now changes to south-west, and the stream-bed deepens. Some miles south-east of Demirji a sharp bend is made north-west into the Chal basin, whence the river issues into the Banaz Ova. Here the stream-bed forms a deep canyon, first in a north-westerly, and then in a south-westerly, direction. A short distance after turning south-west the river is greatly swollen by most of the drainage of the Banaz Ova. This consists in the main of two streams, the Banaz Chai on the east and the Chamly Chai on the west. The former draws its upper tributaries from the Murad Dagh, and west of Burgaz bends sharply west to join the Köplü Chai, as the Chamly Chai is called

in its lower course. The latter rises in the Elma Dag and flows roughly south-west. The united stream flows in this direction to join the Menderez Chai, receiving some distance above the junction the drainage of the eastern slopes between Omurbaba Dag and Akhmedler Dag.

The Maeander continues down a canyon, passing close to Güneī, where the river-bed is about 1,600 ft. below the level of the surrounding plateau. A few miles east of Bulladan it emerges into the triangular plain of Hierapolis. Here it is fairly broad, and the current is swift. It now bends southwards for a few miles till it is joined by the Chürük Su (anc. Lykos), which drains the long trough extending eastwards as far as Bash Cheshme. The main river now bends west. At the bridge opposite Seraī Kōi it is over 60 ft. wide and apparently deep. The valley plain is comparatively narrow till some distance below Ortakche, at first between diluvial foothills and then for a short distance between the mountain-slopes where the Chibukly Dag projects up to the north leaving a pass barely a mile wide for the river to traverse. This pass was in ancient times reckoned the gateway between the lands of the west and Phrygia, and here the lower Maeander valley may be said to begin.

From here to the site of the ancient Magnesia, a distance of nearly 80 miles, the river continues westwards down a gradually widening valley plain, the surface of which is a light sandy loam practically free from stones. The water is muddy and yellow in colour, and the stream flows swiftly in a deep bed between firm banks, which are not as a rule liable to flood. The windings to which the river has given its name are not everywhere characteristic of it. The main tributaries come in on the left bank.

A few miles west of Ortakche the Dandala Su comes in bringing the drainage of the basin lying between the Chibukly Dag and Karynjaly Dag. South of Nazly a more important feeder enters, the Ak Chai (anc. Harpasos), which collects the drainage of the basin formed by the Davas plateau. Its upper valley and those of its feeders in the Davas basin are

in general narrow and even canyon-like. Leaving the Yolaltı Narly the Ak Chai flows north-north-west for about 18 miles through the alluvial plain of Bozdoghan, which varies in breadth from about 1 to 4 miles.

A still more important left-bank tributary is the China Chai, which rises far to the south-east in the hills north of Mughla. Draining the Bayr basin this stream enters the plain of Ahar Kõi, which it leaves by a narrow valley to enter the diluvial plain of Leïna. Then follows a narrow winding break into the China basin, a triangular alluvial plain about  $7\frac{1}{2}$  miles in breadth and length. Here the China Chai receives from the west the drainage of the Karpuzly plain and after this point rounds a low spur into the Jumaly plain, at the north-west end of which another fairly important feeder, the Karaïdin Su, comes in on the right bank. The river now flows down a long narrow valley to the Maeander plain.

Immediately west of the site of the ancient city of Magnesia the Gümüş Dagħ projects into the valley plain and diverts the course of the Maeander south-west. The valley plain from here to the river-mouth is about 28 miles long by 6-8 miles wide. Opposite the Bafı Deniz the breadth is over 11 miles. Between Magnesia and Sokia the course of the river lies near the foot of the hills on the north. Thereafter it bends southwards to the opposite side of the valley. Formerly the bed lay for some miles beyond Sokia along the northern side, to the neighbourhood of the site of Priene, before turning south. The river-bed at the present day is higher than much of the adjoining plain, and an extensive flood-area and swamps are the result. This part of the valley plain, in contrast to the part above Sokia, is steppe-like and for that reason inhabited largely by nomads.

There is little definite information regarding crossings on the upper river. There are several bridges in the Chivril plain and one some distance north of Demirji. There appears also to be a bridge some miles south of the latter place. Near Güneï there are said to be three bridges, and there is a rickety wooden one where the canyon opens out to the

plain of Hierapolis. There appears to be another about half-way between this point and Seraï Kõi. In its lower and middle course the river is unfordable. There are bridges opposite Seraï Kõi (one carrying the chaussée, another lower down for the railway), Ortakche, Kuyujak, Nazly, Aidin, Kemer, and Sarykemer. Of these the bridges at Ortakche and Kuyujak are of wood and unfit for wheeled traffic, and that at Sarykemer is also unsuitable for wheels. There are also ferries opposite Yenibazar, Sakyz Burnu, and Balat, the site of Miletus, and perhaps at a few other points.

*Dalaman Chai (anc. Indos)*

This river, the middle and lower valley of which forms part of the boundary between the area described in this volume and that described in Vol. III, Part 3, has two main upper branches.

The northern branch, the ancient Kazanes, rises in the Khonas Dagħ and, flowing south-east through the marshy plain of Kara Öyük Bazar, is fed by a main tributary which comes from the high-lying valley of Khoros and Göne, through a gorge in the eastern ridge.

The southern arm rises between the Karynja Dagħ and the Kartal Dagħ, and fed by numerous streams flows north down an easy valley which gradually widens out. After some miles an important tributary, the Pirnaz Chai, comes in on the left, a little below Ebejik village, and the united streams, forming a considerable river, continue north down a wide valley which opens out into the Gölhissar Ovasy. The Lake of Gölhissar lies some distance east of the river, separated from it by a slight elevation. The southern branch now begins to be known as the Khorzum Chai, from the important village of Khorzum, which lies some short way from its left bank. Not far below this village the important Chandyr Chai comes in from the south-east, and a little farther down another large stream called Ak Su. By this time the river has taken a north-westerly trend, and still farther down the valley it bends west to join the northern branch.



The upper reaches of the united river are known as the Gereniz Chai. The stream now enters the mountains, and its valley becomes gradually narrower and the sides steeper. In this stage it receives few tributaries. Before long it is unfordable, with a swift current. A short distance below the right-bank village of Assar there is a wooden bridge, and here the river enters a narrow ravine. Some miles lower down it is swollen by an important tributary, the Karanfyl Chai. This stream comes in on the left bank and is perhaps the largest feeder of the river in its middle course. It rises in the neighbourhood of the Kartal Dagħ, not far apparently from the head-waters of the Pirnaz Chai and Karynja Chai.

About the point where the Karanfyl Chai comes in the main stream apparently begins to be called Gürlek Chai, a name also given to a feeder which comes in on the left from the village of Gürlek. Below this point the river seems to flow for some miles in an impassable gorge. Then the valley opens out, and the river is crossed by a stone bridge called Ak Köprü. This bridge has 3 arches rising to about 50 ft. above the water and is used in winter by traffic passing between Yüksekum and Makri, there being no bridge on the direct road.

From Ak Köprü the valley begins to open out till the river enters an alluvial marshy delta, through which it makes its way to the sea. The lower reaches are known as Dalaman Chai from the village of Dalaman in the delta plain.

Some years ago attempts were made to widen one of the gorges through which the river passes in order to make it possible for lumbering to be carried on. The project does not appear to have been successful.

### LAKES

In the account given above of the river system mention has been made incidentally of several of the lakes which lie within our area. The majority of these have outlets to the sea, and their water is accordingly fresh. The most important

are the Manyas Göl, Abulliond Göl, Iznik Göl, Sabanja Göl, Simav Göl, Bafy Deniz, and Köjigez Göl. Besides these there are several lakes which, being undrained, are salt. Among the latter mention should be made of the Mermere Göl and a number of lakes lying east of Denizli. Some details of the lakes enumerated are given below.

*Manyas Göl (anc. Aphnitis Limne)*

This lake covers an area of about 70 sq. miles. Its shores are dull and flat, and the rolling down-like country which surrounds it, though fertile enough where cultivated, is treeless except on the southern side. This southern shore is frequently flooded and affords rank pasture and water-meadows for the herds of buffaloes which graze on it.

On the western and northern shores of the lake respectively are two villages called Kazaklar and Yeni Kazaklar, inhabited by Cossack colonists whose chief occupation is fishing. The boats used by these Cossacks are small extremely narrow canoes. The fish taken include pike, carp, and a large variety of unknown species. These are salted in large numbers for export, in connexion with which the fishermen undertake long journeys in their crazy skiffs. They even make their way down to the Sea of Marmara, through the Dardanelles, and along the western coast to the Bafy Deniz on the south side of the Maeander valley.

*Abulliond Göl (anc. Artynia (Apolloniatis) Limne)*

This sheet of water is about 100 sq. miles in extent and much more picturesque than the Manyas Göl owing to the proximity of the hills and the wooded islands which stud its surface. It is very shallow near the shore, at any rate in the neighbourhood of the town of Abulliond at the north-eastern corner, and much of it dries up in summer. It is said, however, to be in places 20–25 ft. deep. It is navigated by boats and by sea-going kaïks which ascend the Ulubad Chai.

The lake is noted for its richness in crayfish, pike, carp, and other well-known varieties, and also for a large species known

among the Turks as *yayan balık*. Great quantities of these fish are exported. The fishing is carried on by the inhabitants of Abulliond and other villages round the lake.

*Iznik Göl (anc. Askania Limne)*

The Iznik Göl is picturesquely situated between wooded hills, from which it receives a number of small affluents. It measures about 20 miles from west to east and 6 miles from north to south. At different points, notably the eastern and western ends of the lake, there are considerable stretches of cultivated plain. That at the western end is watered by an overflow stream, the course of which has been controlled by embankments.

The lake water is very brackish but nevertheless contains carp and other varieties as well as different kinds of shell-fish.

*Sabanja Göl (anc. Sumonensis Lacus)*

The Sabanja Lake lies at the extreme north-eastern limit of the area included in this volume. It might have some importance as providing part of a waterway from the Gulf of Izmid to the Black Sea. It was proposed in ancient times to cut a canal from the lake to the gulf, and this scheme has also been considered in modern times. At the eastern end the waterway would follow the overflow stream, the Chark Su, into the Sakaria, which could probably be made navigable for vessels of low draught as far up as the point where the Chark Su joins it.

There is no information available as to fishing on the Sabanja Lake.

*Simav Göl*

The Lake of Simav lies at a height of nearly 2,500 ft. It measures about 5 miles in length from west to east and at the eastern end is about 3 miles wide. The western end is about half that breadth. At the latter end the lake lies close under hills, through a gorge in which it drains westwards by the Simav Chai (see above, p. 59). The eastern side is occupied

by the plain of Simav, drained by a number of streams which flow into the lake.

The water appears to be very shallow, and the shores are occupied by a great belt of reeds. These are important as affording materials for the making of mats which are exported from this district.

*Bafy Deniz (anc. Latmikos Kolpos)*

This lake was formerly an arm of the sea, from which it is now cut off by alluvium brought down by the Maeander. It is rather remarkable that the river has not cut a passage into the lake, as the Maeander current is here strong, and only a narrow strip separates the two. The lake drains west to the Maeander by a narrow and very sluggish but deep stream.

The water-level lies a little over 300 ft. above the sea, practically at the same height as the Maeander plain. At the north-western end is a shallow bay called Chirchin Deniz, largely occupied by reeds. This bay is separated from the main part of the lake by a dam. The water is brackish and is full of fish similar in type to those of the adjoining sea. The fish are, however, said to have an unpleasant flavour. Fishing is carried on by the inhabitants of the few villages round the lake. The boats used are procured from the Cossacks of the Manyas Göl, who come as far south as this in their canoes.

*Köijigez Göl*

Like the Bafy Deniz the Köijigez Lake was formerly a gulf, the narrow outlet of which to the sea has been converted by alluvial deposit into a plain. It measures about 10 miles from north-west to south-east and 4-5 miles from west to east. The stream which drains the lake to the Mediterranean is navigable by kaïks. Where the hills recede from the lake the shore is marshy, and much of it is covered with thick reed-jungle.

The lake contains fish, but there is no evidence as to any exploitation of this source of trade. The chief importance

of the lake is that it enables vessels engaged in the timber trade and in the export of chrome ore to come up from the open sea to Yüksekum. The whole of the neighbourhood is picturesque but unhealthy.

*Mermere Göl (anc. Koloe (Gygaea) Limne)*

This lake is about  $7\frac{1}{2}$  miles long by 2 miles wide at its broadest point. It has some importance for its fisheries, exploited by Cossack settlers. The level of the lake has been estimated at a little over 240 ft. above the sea and slightly below the bed of the Gediz Chai, the flood-waters of which help to feed it. As there appeared at one time to be a danger of the lake drying up, a feed-canal was cut in 1890 from the Gediz Chai which now keeps it at a uniform level. In winter it is the haunt of innumerable waterfowl, including wild swans.

*The Lakes East of Denizli*

These lakes have no drainage outlet: Three of them are quite small, the Salda Göl, Navlo Göl, and Chorak Göl. The remaining two, the Ajy Tuz Göl (anc. Anaua Limne) and Buldur Göl (anc. Askania Limne), are extensive. All of them contain fish except the Ajy Tuz Göl, which is too salt. No details are available as to fisheries. All the lakes are marshy round the edges and are frequented by waterfowl.

## CHAPTER III

### MINERAL RESOURCES

Metallic minerals—Non-metallic minerals.

THE mineral resources of western Asia Minor are considerable and varied, but have hitherto been comparatively little exploited. (For statistics of production and analysis of different minerals see Vol. I, Chapter II.)

#### METALLIC MINERALS

There is one large ore-bearing area in the north-western region which is developed according to modern methods. This is the Balia Maden mine-field, where argentiferous lead and zinc and manganese ore are mined by quite a number of shafts and to some extent smelted on the spot. The exploitation of this field is favoured by the presence of extensive forests in the neighbourhood and a lignite mine not far distant, at which an electric power-station has been erected. A horse-trolley line runs from the mines down to the Edremid-Balikesr chaussée and possibly follows the chaussée to the Edremid plain. The mines are the property of a Constantinople company backed by French capital. The workers consist of Turks, Kurds, Lazis, and Greeks. About 25 miles west of Balia Maden, at Karaïdin, is a similar mine, now abandoned, which belongs to the same company. There is an undeveloped field near Edremid, and smaller lead mines are found near Bergama, Mermere, and Kimituria. Zinc ore is also found at Kimituria as well as at Balia Maden, Menteshdere, Kirasly Yaila between Iznik and Yenishehir, and at 6 miles north of Bergama.

Chromite is found in many small seams where the geological formation is serpentine, and is quarried in open workings. The chief chromite-bearing districts are those of Dagardy

and Chardy, in the interior of Mysia, 35-40 miles south of Brussa and the same distance west of Kutahia. These mines are mainly under Turkish control. Krupps of Essen are also said to have an interest in them. Most of the ore is brought by means of small carts or on the backs of pack-animals to the Anatolian railway at Kutahia; only the most northerly mine sends its ore to the port of Gemlik on the Sea of Marmara. A second chromite district lies near the south coast, above Yüksekum and Makri. There are also deposits near Denizli.

There is an antimony mine near Emirli (south-east of Ödemish), and there are deposits at İvrindi and Demir Kapu and at other places in the Aydın vilayet. Antimony is also found on the Murad Dag (east of Gediz) and near Hazkői (not far from Nazly), copper in the Kosak district (behind Bergama), near Seljeli (Chal, on the upper Maeander), and at Kadykalesi (not far from Budrum). Arsenopyrite and manganese are also found at Kadykalesi. There is manganese at Takhtaly and many other places in the Aydın vilayet as well as at Balıa Maden and along the Marmara coast, manganese and zinc at Lytri (opposite Khios), arsenopyrite near Ödemish and Tire, cinnabar at Akhyrly (on the peninsula of Karaburun west of Smyrna), at Elibler (on the Messogis range), and at Halykői (south-east of Ödemish). Iron ore is found in different districts. The deposits in the Bazar Kői-Gemlik district do not appear to be exploited. There is an important mine, however, in the neighbourhood of Trianda and another on Beshparmak. Gold appears to be worked only at Kremaste in the Troad, but auriferous arsenopyrite is found in various places in the Aydın vilayet, particularly in the neighbourhood of Tire and Ödemish.

#### NON-METALLIC MINERALS

Lignite is the only kind of coal found in our area. It is met with throughout the west, and in a number of districts seams have already been exhausted, e. g. at Sighajyk, Gereme, and other places. The most important mine is probably that at Manjylyk, where the fuel is converted into electrical

energy. The mines at Sokia had some importance during the war, and there are others of less importance at Soma, Hamidie (near Torbaly), Karabunar (west of Aidin), Kiosk (east of Aidin), Akche (west of Nazly), Gereniz (west of Nazly), Mastoura (north-east of Nazly), Seraï Kõi, Koja Bash (east of Denizli), and one or two other places. Some of these are not worked at present.

Among rare minerals found in western Asia Minor the most important is emery, the greater part of the world's supply of which comes from our area. The Anatolian emery is found in small, but very numerous, deposits in crystalline limestone, and, like chromite, is mined in small primitive quarries. The main source of the supply is the Gümüş Dagħ on the northern side of the lower Maeander valley, whence the ore is conveyed by pack-caravan to Azizie station on the Ottoman railway. Other emery mines are found farther north as far as Ephesus and beyond, eastwards as far as the upper Maeander, and southwards as far as central Karia. The bulk of the emery industry is in English hands, and the ore is shipped from Smyrna.

Meerschauum, a less highly prized commodity now than formerly, is also a product chiefly found in Asia Minor. It occurs in lumps at no great depth below the surface in places where the formation is a serpentine conglomerate. It is mined from open pits and shafts and is exported to Europe, mainly to Vienna. The supply comes chiefly from the districts west and east of Eskishehir.

Boracite is found in lumps at Sultanshehir some miles south of Susurlu. The mines here belong to a British company. The mining of alum had formerly some importance at Shabhane west of Gediz, but has now been abandoned here as everywhere else.

Opals from Karamanjyk (near Simav) have lately come on the market. (Veins of quartz containing iron, copper, gold, silver, and platinum are known to exist in the same district.)

Building and paving stone is found in many districts in western Asia Minor. The chief kinds of stone are granite,



andesite and others of volcanic origin, and limestone. They have hitherto been used only for local requirements. The granite paving-stone quarries at Ermeniköi (opposite Panderma) deserve special mention. A compact reddish volcanic tufa is exploited to a considerable extent at Cape Sarmusaky, not far from Aivalyk, and near Fochatyn and Yenije Focha. It is extensively used in Smyrna and other towns for paving purposes, lintels, millstones, &c. Marble is also common and is sometimes of a quality fit for artistic purposes. At present it is used chiefly as ordinary building stone or for burning down into lime. A beginning was made of quarrying lithographic stone north of Mikhalij, but the material was not found suitable.

Clay fit for pottery is procurable in many places.

The demands of the native population for salt are supplied for the most part by the salt-pans at different places along the coast, mainly at the mouths of the Hermos and Maeander. Salt is also obtained in places from springs, e.g. at Tuzla in the Troad. The preparation of salt is a State monopoly.

Nearly every district in the west of Asia Minor, but especially Mysia and Lydia, is rich in hot springs, most of which are sulphurous. Many of them are used by the natives as health resorts. The bathing establishments and conveniences are as a rule extremely primitive, and most of the visitors are content with wattle huts to live in. The most famous baths are those at Brussa; the best accommodation is found at Alashehir. Many other bathing-places might have a great future if proper arrangements were made. In some cases, e.g. at Ilija near Cheshme, the advantages of hot sulphur baths are combined with nearness to the sea. Deposits of sulphur have been noted near Kale Sultanie and in the Aïdin vilayet but have not been worked.

Besides the sulphur springs there are a great many carbonic acid springs, from which mineral water is already exported in some quantity to Constantinople, Smyrna, &c. The springs of Chitli near Inegöl and of Sarysu near Alashehir are exploited in this way.

## CHAPTER IV

### SCRUB AND FOREST VEGETATION

Introduction—Distribution of scrub and timber.

#### INTRODUCTION

ONLY the steppe country of the plateau of Asia Minor is by nature bare of wood. Elsewhere, in spite of the ravages of centuries, the whole country still possesses extensive forests. The gradual reduction of the forest area is of course a necessary corollary of a primitive civilization. There is no properly organized forestry department in Turkey. In the more important cases the State demands a small tax, but, practically speaking, there is no control. Near the towns there is a regular trade in charcoal and firewood, and many thickly populated districts formerly wooded are now almost stripped of trees. In the more remote parts, where there are still large stretches of virgin forest, the peasants take the wood as they want it, frequently carrying off only the branches and leaving the trunks to rot. Great damage is also caused by shepherds who sometimes through carelessness start forest fires, sometimes deliberately burn down the trees to make pasture-land. Up to a height of over 3,000 feet where the woods have been destroyed, the teeth of goats generally prevent natural re-afforestation. From between 3,500 ft. and 4,500 feet up to the tree-line (about 6,000 ft.), particularly in the Mysian forest region, there is generally sufficient moisture, provided there is depth of soil, to enable the trees to spring up again. Even here, however, when the destruction is too frequently repeated the trees give way to more or less stunted scrub, or else the ground is left quite bare.

The rivers are comparatively little used for lumbering, the

only names worth mentioning in this connexion being the Menderez Chai in the Troad, the streams draining the Mysian Olympus, and the Dalaman Chai. They are much more important as furnishing power for driving numerous small saw-mills. The latter are found nearly everywhere in the wooded highlands where there is running water and the roads are not too difficult. The construction of the mills is very simple, a wooden pipe carrying the water at a sharp angle on to the wheel. When a part of a forest has been cleared the mill is easily moved to a more convenient spot. The sawn boards are removed by pack-transport. The industry, generally speaking, is in the hands not of Turks but of Bulgarians, Circassians, Greeks, &c.

A still more primitive style of woodcutting is carried on by the Takhtajys, who are found here and there in the hills in small communities housed in wattle huts or tents. They use a large hand-saw worked by two or three persons to cut the logs into boards.

The building of railways has accelerated the destruction of the woods by creating a demand for sleepers and incidentally by making the export of wood easier. In recent years also there has been a large sea-borne trade in timber from the Karian coast to Egypt. The port of Yüksekkum owing to this traffic has risen from the position of a small village to that of a flourishing township.

In the following paragraphs only the most important trees are dealt with, and little account is given of fruit-trees or the like, which in the better-cultivated districts may form quite extensive woods (for fruit-cultivation see Chapter VI). Of the trees mentioned the valonia perhaps calls for some special note. This tree includes several varieties of oak (*Quercus aegilops* L.). It reaches a fair height and is found here and there all over the area covered by this volume, except on the steppe land dealt with under the fifth zone. Sometimes it is to be seen growing in the fields or pasture-land, sometimes in rows or open clumps. It grows wild but is carefully preserved for the sake of the acorn cups, which are used for

tanning. The yearly export of valonia before the war varied from about 48,000 to about 65,000 tons, mostly shipped from Smyrna.

### DISTRIBUTION OF SCRUB AND TIMBER

The account given below follows the division of the country into geographical zones made on pp. 11-12 above.

#### FIRST ZONE

The most important forests in the Troad are the pine woods of the Kaz Dagħ. The district as a whole, however, is well wooded. The Chamly Dagħ, which forms the watershed between the Koja Chai and Bigha Chai, is, as its name implies, wooded with pines, and not far from it are the woods of Sachlar. There are also fairly extensive forests of pine, fir, oak, beech, lime, elm, and plane on the Dikeli Dagħ (north of Chipne) and on the hills south of Lapsaki. In the kaza of Bigha the oak forest of Eshelik Dagħ, about 20 miles from the sea, is probably still important, and in the same kaza but farther inland are the woods of Ikichi, Kyzyl Elma, Kara Koja, and Aghy Dagħ. On the west coast north of Sakar Kaya the whole of the coastal plain and hill-slopes are covered by an extensive forest of valonias. South of this the ground is at first covered with scrub, mostly oak. Still farther south the scrub itself disappears, and the hill-sides are more or less bare. It may be added that the slopes along the northern shore of the Gulf of Edremid are covered with luxuriant olive woods.

The seaward face of the coastal range which rises east of the Gönen Chai is characterized by the usual Mediterranean type of vegetation, and the slopes are largely overgrown with maquis. The landward side is generally bare. Most of the timber on the range is to be found on the Kara Dagħ and in the section north and north-east of the Brussa plain.

Little need be said of the coastal depression. It is practically treeless except for the cultivated trees towards the eastern extremity. On the other hand the hill country south of the great depression is one of the best wooded districts of

the peninsula. West of the Susurlu Chai, it is true, the forests which formerly occupied large areas are now represented only by scattered trees or by evergreen scrub. This is the case, for example, between Balia Maden and Karaïdin or again between the latter district and Manjylyk. In many places, however, there are still extensive woods. Thus the upper slopes between Gönen and Manjylyk are covered with beeches, and the road from Manyas to Balikesir for several miles leads through a mixed forest of oak, beech, and birch.

East of the Susurlu Chai the timber has suffered less. The forest here is not light and scattered, as in the Mediterranean region, but close, with large tree-trunks and, in places, with a thick undergrowth of deciduous oaks. Generally speaking, few non-coniferous evergreens are found. It is true that on the northern edge of the mountains typical maquis vegetation occurs, probably due to the mild winter climate, while junipers, characteristic of the central plateau, are found in the northern parts of Chardy and east of Egrigöz Dagh. The predominating trees, however, are a variety of pine with a strong upright trunk and thick top, and the beech. There is no definite lower limit for the former, as it is found in the lowest valleys. The beech on the other hand is found only above a certain height. Its lower limit rises towards the south-east. On the Chatal Dagh and the south-eastern side of Monastir Dagh it begins at 2,300–2,600 ft., on the northern flanks of the Alacham Dagh and Demirji Dagh at 4,000 ft., on the north of the Ak Dagh at about 4,400 ft. and on the south side of the Ak Dagh only at 5,250–5,600 ft. Curiously enough it is not found on the Egrigöz Dagh, though it reappears on the Murad Dagh considerably farther to the south-east.

Below the beech-level other deciduous trees, such as the oak, or deciduous scrub are often found with the pines. Valonias are met with in some numbers near Kepsut, Spanish chestnuts at the northern foot of Demirji Dagh, and firs (mixed with beeches) above a height of 3,300 ft. on Chatal Dagh.

The beeches on Ak Dagħ and the pines on Egrigöz Dagħ go right up to the tree-line (6,700 ft.). Above the forest-line there is a belt of stunted junipers.

The border line between the forest vegetation of the Mysian country and the plateau may be taken as running from the Simav Göl over the Egrigöz Dagħ and then north-east to İnönü. The country east and north of İnönü belongs to the forest belt of the south Black Sea coast and is, generally speaking, well wooded.

#### SECOND ZONE

Within this zone the maquis vegetation of the Mediterranean seaboard is found only near the coast. Evergreen oak scrub is the most generally distributed type. The other main kinds are found only along the coast or on the south side of the Yünd Dagħ. It is in the latter region also that the maquis penetrates farthest inland, and here it is found up to a height of about 2,000 ft.

The olive thrives along the coast and throughout the basin of the Bakyr Chai up to a height of 1,300 ft. above sea-level. The chief forest tree is the pine. Pine woods cover the mountains north of Bergama, the north side of Yailanjyk Dagħ, parts of the Kosak hills, the Menteshler Dagħ, and the Deniz Dagħ. Considerable woods of deciduous oaks are found on the Yailanjyk Dagħ, on the west side of Madaras Dagħ, on Akmas Dagħ, and on the eastern end of the Yünd Dagħ. The western portion of the Yünd Dagħ is in the main either bare or covered only with scanty shrub vegetation. In many localities valonias are found, usually scattered and often growing in the cultivated fields. Chestnuts are met with here and there, for example above a height of 1,600 ft. on the north sides of the Geyikli Dagħ and on the Yünd Dagħ.

#### THIRD ZONE

With the exception of the steppe region this is the most sparsely wooded, as it is also the most thickly populated, part of the west of Asia Minor. The vegetation of the Erythraean

peninsula is of the usual Mediterranean type. Maquis is found nearly everywhere, and, where there is moisture, attains a luxuriant growth. Pine forest is met with here and there, on the hills west of the Bay of Sighajyk, near Hypsili, on the Kyzyl Dag, and on the Karaja Dag (west of Kimituria). There is a valonia forest north of Hypsili, and valonias are found scattered on the hills and in the plains farther east.

On the seaward side of the block of hills north and north-east of Smyrna (the ancient Sipylos) maquis is the chief vegetation on the lower levels and evergreen oak scrub on the higher. There is pine forest of considerable extent on Yamanlar Dag, but on the rugged mass of Manisa Dag farther east it has disappeared except on the eastern slopes. The Takh-taly or Nif Dag south of Sipylos is also largely bare except for scrub and a few pines.

We have now to deal with the hills separating the Hermos and Maeander valleys, the ancient Tmolos and Messogis. On the former the forests have almost disappeared at its western end. There is a fairly extensive pine wood on the Karabel, and oak forest is to be seen south of Kara Köi. Otherwise, besides low scrub, there are only scattered remains of forest or single pines and oaks on the slopes. Some of the valleys, however, are well wooded with pines, oaks, chestnuts, poplars, planes, terebinths, cypresses, and Judas trees. The western prolongation of Messogis is better wooded than the main ridge, the Samsun Dag and part of the Gümüş Dag being still covered with a fine forest of pines. Maquis is of course general here. The western end of Messogis itself is fairly well wooded with pines; there are valonias and pines near Kochak, a chestnut wood above Tire, and oaks and chestnuts in the upper part of the Mendegümme valley. Eastwards, where Tmolos and Messogis unite, the fine forests which must formerly have existed here have now almost entirely vanished. Small clumps and single trees are still fairly frequent. Oaks are found on Tmolos up to a height of about 5,000 ft. and pines to a slightly greater altitude. Lower down come chestnuts, valonias, terebinths, Judas trees,

and other deciduous species. A valonia forest clothes the southern slopes of Tmolos above Elbi up to about 3,300 ft., and fine chestnut woods the northern flanks of Messogis near Baliamboli to about 4,000 ft. The olive also flourishes here up to a height of about 1,000 ft.

## FOURTH ZONE

*The Country between the Lower Maeander Valley and the Line  
Asyn Kale-Karajasu*

The whole of the area covered by this section has a typically Mediterranean climate. In the coastal districts maquis vegetation is widely distributed but disappears east of Madaran Dagħ and gives place to evergreen and deciduous scrub. Deciduous trees are almost completely absent, with the exception of fruit-trees, such as the fig, and of a few patches of valonias and chestnuts on the edge of the Maeander valley in its lowest part. The slopes along the whole of the southern edge of the valley are thickly planted with olives. The chief mountain tree is of course the pine. It is found between Chatal Alan and Aksivri and grows extensively on the Gök Bel, on the mountains round Aharköi, Mesevle, and Kemer, on the spurs of Madaran Dagħ, and on the Karynjaly Dagħ. Fine pine woods also cover the lower slopes of Beshparmak, the neighbourhood of Merzibelen, and the heights round the Torba plain, and in these districts pine-kernels constitute an article of export. The summits of Beshparmak have no vegetation except dwarf shrubs.

*The South-western and Southern Coastal Region*

1. The area described in the paragraphs under the heading (1) on pp. 33-5 above is, owing to the predominance of the limestone here, nearly everywhere barren, rocky, and dry. There are practically no springs in the interior, the water sinking underground and appearing only on the edges of the plains and along the coasts. Most of the smaller streams also dry up in summer.



In spite of the lack of moisture and soil, however, large areas are wooded. Thus there is fine pine forest on the plateau between the Karova and Gök Bel, on the hills round the Duz Ova and the depression crossed by the Milas-Mughla chaussée, and on the whole of the mountain-sides south of the Penjik Dagħ-Marishal Dagħ highland from Akbuki to Denizovasy. Remains of pine forest are also found at the western end of the promontory of Budrum.

Maquis vegetation is widely spread along the coasts and frequently attains a luxuriant growth. Here also there are extensive olive groves, which flourish up to an altitude of about 2,000 ft. In the interior, for example on the Mughla plateau, maquis is replaced by scanty evergreen and deciduous scrub.

2. The vegetation of the promontory of Knidos consists of shrubs and the remains of pine forest. Maquis and valonias are found in the valleys, with fruit-trees of course round the villages. Eastwards the undulating hills along the narrow strip from Keörmen Liman to Benyik Bay is thickly overgrown with maquis and pines. The same is true of nearly the whole of the remainder of the area covered by this section, with the exception of the Köijigez-Dalaman depression and of the peninsula stretching from the Bays of Erine and Mermeris to Cape Alupo. The greater part of this southern coastal belt, with the exceptions indicated, is covered with an immense pine forest. Along the coast the woods have been very largely destroyed and have given place to maquis, among which the myrtle is the commonest shrub. As for the peninsula just mentioned pines are found here also but only in patches, perhaps owing to the presence of the limestone. The Köijigez-Dalaman depression is partly occupied by cultivation, partly by marsh in which reeds constitute the chief vegetation. The uncultivated portions of it, however, at any rate in the Dalaman delta, are often covered with a tangled growth of brambles, rhododendrons, and oleanders and also by considerable numbers of hardwood trees such as alder and ash,

*The Central and Eastern Karian Highland and the Hills North  
of the Gebren Chai*

The mountain-slopes falling west toward the Mughla plateau are very largely deforested. On the other hand the inner side of the mountain rim of the Davas plateau, from Baliania to Eskere Boghaz, is finely wooded with pines, which also cover the ridges and valley-sides in the whole southern part of the Davas depression along the Deli Chai, in the Irmak district, and round Eskere. The slopes of Sandras Dagħ towards the Dalaman Chai are wooded with pines, and the same is probably true of the mountain as a whole. The three main mountain blocks on the eastern side of the Davas plateau, Kara Dagħ, Boz Dagħ, and Akche Dagħ, appear to be almost bare. The pines reappear on the eastern slopes above Ajy Padem.

To north of the Davas plateau, on the northern slopes of Buba Dagħ, deciduous trees are found up to 5,000 ft. The beech, however, is not met with here, and there is no forest, only scattered remains of woods. On the southern slopes scattered junipers are to be seen. The foothills round Denizli are occupied with olive groves. At the exits of the valleys on to the Denizli plain, along the edge of the plain, round Denizli itself, and at Khonas the plentiful streams from the mountains water many orchards, in which the commonest tree is the walnut. The silver-leaved elaeagnus is common in the valleys. Higher up, from a height of about 2,000 ft., evergreen and valonia scrub are widely distributed, and chestnuts and other deciduous trees such as the wild walnut begin, with pine forest. The forest growth on Khonas Dagħ is well preserved. On its northern sides the pine woods go up to nearly 6,000 ft. and high junipers about 400 ft. more.

There is little information for the hills to south-east and east of Khonas Dagħ. Scrub is general. Apparently there is also a fair amount of timber, mainly pines, oaks, and junipers, though thick forest is not common. There are, however, considerable woods between Kechiborlu and Dineir.

## FIFTH ZONE

*The Plateau West and North of Kutahia*

The plateau stretching east and south from the Mysian highland shows a marked contrast in vegetation to the mountain system described in the paragraphs dealing with the first zone. Owing to the dryness of the climate here, there is little weathering of the surface, and wide stretches are almost bare. The chief vegetation consists of scrub growing in tufts at intervals of several yards, the intervening ground being bare except in early summer, when there is a scanty covering of grass and ground shrubs. The scrub is composed mainly of dwarf fir and juniper, foliaceous bush (partly deciduous oak, partly thorny scrub with few leaves), and a number of prickly shrubs, particularly varieties of tragacanth. In contrast to the Mediterranean regions evergreen scrub is here absent. The bush gradually disappears as one proceeds inland, giving place to grass and ground shrubs. In height it varies greatly, from a couple of feet to over 6 feet. Single pines and junipers may be seen here and there.

*The Country South of Kutahia as far as the Line Ak Dagh-Murad Dagh-Afjun Kara Hissar*

The vegetation of the plateau districts in this area does not differ to any important extent from that indicated in the preceding paragraph. Occasional single trees, pines and junipers, are found here also among the scrub. There is even scattered pine forest in one part between Chavdyr Hissar and Kutahia, but evergreen oak scrub is practically non-existent. East of the Porsuk Chai the grass steppe predominates.

On the other hand the mountain blocks, owing to greater rainfall and the moisture afforded by the melting of the snows, are well covered with vegetation. The low elevations east of the Porsuk Chai do not of course differ much from the plateau. On the western mountains, however, the low scrub of the lower slopes gives way higher up to high deciduous bush, which in turn gives place to pine forest. On the north

side of Murad Dagħ, above a level of 5,250 ft., beeches are interspersed with the pines. They are not found farther south than Murad Dagħ in the western region of Asia Minor. The tree-line on Ak Dagħ lies at about 6,200 ft. and on Murad Dagħ about 6,500 ft., and is marked by a belt of juniper scrub. The wooded areas on these mountain blocks within the plateau have of course been greatly reduced owing to the demands made on them by the surrounding unwooded districts.

### *The Transition Region of the Plateau*

*The Area Drained by the Upper Gediz Chai and its Tributaries.*—The transition in physical conformation from the western region to the central plateau already commented on in Chapter I has its counterpart in the vegetation. There is here a good deal of timber. Strips of scrub, poplars, willows, and elaeagnus accompany the streams. Pines, with valonias and other deciduous trees, are common on the valley-slopes and on the lower mountain groups. Higher up, on As Tepe, Yaghjy Dagħ, and east of Alashehir, deciduous oak woods are found. Single trees of the kinds already mentioned are to be seen in the cultivated fields and on the unwooded plateaus on the west, with chestnuts and in particular valonias. Pines, oaks, and wild pears are common on the northern slopes of the southern mountain rim. The southern slopes of the latter are almost completely bare of timber, partly no doubt owing to deforestation as well as the scarcity of rainfall. The olive, however, is found here. It is not met with elsewhere in the area under consideration.

Large areas of plateau of course show the typical steppe vegetation; generally deciduous oak scrub, which eastwards gives place more and more to thorny shrubs. Evergreen oak scrub is found on the mountains east of Alashehir and in the Katakekaumene. In the eastern part of the present area the woods are apparently confined to the higher mountain levels, and the predominant vegetation is that of the steppe.

*The Country East and South of the Upper Gediz Chai Basin.*—Here the hills are covered either with deciduous

scrub or extensive woods. The latter are found especially on Ahar Dag and Karshak Dag and also on Chökeles Dag and between it and the plain of Hierapolis. They consist mostly of pines, which on the two mountains first mentioned form true virgin forest both as regards density and height. On Ak Dag also forest of high junipers characteristic of the southern regions of Asia Minor is met with. There are fine valonia groves between Ushak and Islam Köi. In the present area they do not appear to grow at a greater elevation than 4,000 ft.

The vegetation of the Banaz Ova and the neighbouring plateaus and plains to south and east is only in places typical of the central plateau. The latter is the case where there has been little weathering of the surface, and here the shrubs of the steppe are found, consisting usually of evergreen oak scrub. As a rule there is some depth of soil, and the natural vegetation is thin forest, generally scattered pine woods and occasionally valonias. Large valonia woods cover the edge of the plain at the foot of the Burgaz Dag. Juniper scrub is also common. Where the forest has been destroyed the ground is now occupied by oak scrub or pasture or infertile plough-land. Single trees are often to be seen in the fields, mainly valonias but also pines and wild pears.

## CHAPTER V

### POPULATION

Introduction—Details of racial distribution.

#### INTRODUCTION

ETHNOGRAPHICAL statistics for Anatolia are neither complete nor specially reliable. The most recent figures for our area are from Greek sources and date from 1911 and 1912. They show, what might be expected *a priori*, that in the coastal regions there is a considerable mixture of population, while in the interior the great bulk of the inhabitants must be classed as Turks. On the Aegean seaboard naturally the chief element of racial admixture is Greek. In the coastal region of the Dardanelles and the Sea of Marmara there are also districts where Greeks predominate, as well as others where Armenians are more numerous than either Greeks or Turks. The chief non-Turkish population here, however, is composed of Moslem immigrants of various nationalities from the Balkans. These immigrants are termed *Muhajirs* and, though racially distinct from the Anatolian peasantry, must be classed politically with them, inasmuch as they have in most cases entered Asia Minor in order to remain subjects of the Turkish Empire.

The total population of the area covered by this handbook appears to have been in 1911 about  $3\frac{1}{4}$  millions. The most thickly inhabited areas are the coastal plains and the great river valleys tapped by the railways. In the hills naturally the population is sparser, the numbers varying according to the extent and fertility of the areas of cultivation.

#### DETAILS OF RACIAL DISTRIBUTION

##### *Northern Area*

The population of the Troad appears to have undergone a remarkable increase during the last generation. According to figures given in 1911, and professing to be official, the popula-

tion of the kaza of Bigha had been quadrupled during the 30 years previous to that date, mainly as a result of immigration. Even if the proportion of increase is greater here than elsewhere it is certain that there has been a fairly general expansion. The immigrants are mostly refugees from the European provinces of Turkey, and the present population is therefore extremely mixed. Greeks are not numerous except in the larger towns and villages. Encampments of Yürüks may be met with on the hills.

Along the Marmara coast Greeks are in the majority in three districts. The most important of these is the peninsula of Cyzicus. Here, except for the Turkish inhabitants of Hammamlar and Yeniköi, the Armenians in Ermeniköi, and the Turks and Circassians in Artaki, the population is entirely composed of Greeks, who constitute 89 per cent. of the whole. The other two predominantly Greek areas are the kaza of Mudania and that of Karamursal, where the proportion of Greeks is 76 per cent. and 67 per cent. respectively. The number of Armenians round the shores of the Gulf of Gemlik is about double that of Greeks and Turks, while round the Gulf of Izmid, where Greeks are not numerous, Armenians and Turks are about equally divided. Elsewhere the Turks are in a majority.

In the depression behind the coastal range the population is extremely mixed. Many of the villages are occupied by Muhajirs, and in addition to the Greek villages, most of which lie around the Abulliond Göl, there is a considerable Hellenic element in the larger centres. There were also, before the war, two Cossack fisher settlements on the shores of the Manyas Göl.

The population of the Mysian highlands is sparse except in a few localities such as Balia Bazar Köi, Ivrindi, Balikesr, Sindirgi, Simav, &c. It is predominantly Moslem, the proportion increasing from west to east and from north to south. A good many of the inhabitants are Muhajirs, particularly in the fertile Rhyndakos valley from Kirmasti up to Kestelek and Bükköi, and on Chatal Dagh. There are small Greek colonies in various towns and districts, mainly in the

west, where they are chiefly immigrants from Imbros or Isbarta. Greeks constitute about half the population of Sindirgi. There are Greeks in Balat, but these speak only Turkish. Yürüks are found in the district west of Balia Bazar Köi and in the mountains east of the Susurlu Chai. West of Balikesir there is a district inhabited largely by the Chetmi or Chepni tribe, who seem to be akin to the Takhtajys. The population of the more inaccessible districts is mainly Turkish and engaged chiefly in agriculture, though pastoral habits seem to have been more general formerly than at the present day. Owing to the number and fertility of the small areas of cultivation the numbers are higher than might be expected. The non-Turkish population is largely composed of settled Yürüks, of whom there are several scattered villages round Kepsut, between that place and Urkhanlar, between Uluz and Alacham Dag, and on Keshish and Dumanich Dag. Still more important Yürük areas are the whole of the country between Balat and Ak Dag and the Dagardy district including the northern slopes of Egrigöz Dag. There are practically no Turkish villages on the hills between Inegöl and Inönü. Circassian settlements predominate here, though Yürüks, Muhajirs, and Albanians are also found. A good many villages in this district have a mixed population of these racial elements.

### *Western Area*

The coastal plains from the Gulf of Edremid on the north to Aivalyk on the south are fairly thickly inhabited, with a mixed population of Greeks and Turks. There are few purely Turkish villages, though Turks constitute over 50 per cent. of the whole except at Aivalyk, where there were nearly 100 per cent. of Greeks before 1914. Many of these were deported in the early stages of the war. A few other villages are also purely Greek.

The figures for the kazas of Bergama, Menemen, and Manisa show that in these districts Turks and Greeks are pretty evenly divided. The Greeks are mainly colonists from



Mitylene. Along the coast they are found in separate villages and are engaged partly in agriculture, partly in fishing and maritime enterprise. In most of the towns they generally occupy separate quarters and carry on most of the trades and professions. Greek shopkeepers and artisans are also found here and there all over the districts in question. Turkmen and Circassian colonies are met with in places, and there are a few Spanish Jews, Armenians, and Gipsies in the towns. Some fairly extensive areas, e. g. the southern side of the Yünd Dagh, are occupied by Yürüks, who have comparatively recently settled down.

The coastal districts from Aliaga to Asyn Kale are predominantly a Greek area. In some parts, e. g. the kazas of Eski Focha, Vurla, and Cheshme, the proportion of Greeks ranges from 80 per cent. to 95 per cent. of the whole. In the town of Smyrna Greeks appear to constitute from about a half to two-thirds of the total population.

In the Erythraean peninsula west of Smyrna there appears to be little difference physically between Moslems and Greeks, all alike being of Greek type. The villages of Alatsata and Reizdere are almost entirely, Vurla and Cheshme mainly, inhabited by Greeks. There are, besides, a number of smaller Greek villages, in addition to others with a mixed population. Some villages on the west coast, e. g. Lytri, were colonized from Khios after the massacre of 1822 about the same time as a number of Greek Mohammedans from the Peloponnese settled in Cheshme. It is noteworthy, as showing the expansion of the Greek population relatively to the Turks, that many of their villages have Turkish names.

Greeks and Turks appear to be pretty evenly balanced within a short distance of Smyrna on the north-east. East and south of Smyrna the Greeks appear to remain in a majority as far east as the line Manisa-Sokia-Asyn Kale. South of the plain of Jimovasy and east of Deirmendere there are some Yürük villages and one Muhajir village. In the lower Maeander plain wandering bands of nomads may be met with.

The country east of the districts already dealt with in this

section shows a majority of Turks, and that preponderance increases generally eastwards. For a good many years, however, there has been a steady Greek penetration along the line of the railways. Among other minorities mention should be made of Yürüks, of whom there are a good many settlements on the Mermere hills and on the Tmolos and Messogis ranges, particularly between Bulladan and Inegöl. South-west of Alashehir and at Sarachova there are Takhtajy or Kyzylbash villages, while there are considerable numbers of nomads in the Kelles plain and between Alashehir and Elbi.

### *The Karian District*

Part of this district, between Miletus and Asyn Kale, where Greeks are in a majority, has been referred to in the preceding section. The population of the remainder of Karia is smaller even than the mountainous nature of the country appears to warrant. It is almost entirely Turkish. Greeks are found mainly round the Gulf of Mendelia, in and around Milas, in Mughla and Yükksekum, and here and there as millers, shopkeepers, and artisans. On the south coast Greeks are few, but it may be noted that many of the so-called Turks here have Greek features and probably represent a Hellenic population which has adopted Islam. Many of the place-names also are Greek. Yürüks are seldom met with and Muhajirs not at all.

### *The Area inside the Mountain Rim*

In this area the population is not numerous except in a few large centres such as Kula, Demirji, Gördiz, Eskishehir, and Afiun Kara Hissar. Apart from these towns the most thickly inhabited areas are the Katakekaumene, one or two valleys such as that of the Demirji Chai, and plains like that of Chal or Chivril. Most of the settlements are found on the slopes bordering the plains. Except in the Kula district the population is over 75 per cent. Moslem, the proportion increasing eastwards to practically 100 per cent.

In the Kula district there is a fair proportion of Greeks,

who have apparently been settled there for a long time and speak Turkish as their mother tongue. The village of Gölde in particular is almost entirely Greek. There is also a fairly important Greek colony in Ushak.

As in the Mysian hill country, so here a considerable proportion of the non-Turkish population is Yürük. Yürük settlements are met with over the whole of the country between Takmak and Demirji, from Ushak to Ishikli and from the latter place north to Chiftlik Köi. There are also Yürük villages on Murad Dagħ and here and there on the plateau country to north. Other racial elements such as Circassians, Muhajirs, and Takhtajys are so few as to be negligible.

Except in the towns the chief occupation of the inhabitants in the districts under present consideration is agriculture. Chiftliks are fairly common.

## CHAPTER VI

### AGRICULTURE, FRUIT AND VEGETABLE-GROWING, AND STOCK-RAISING

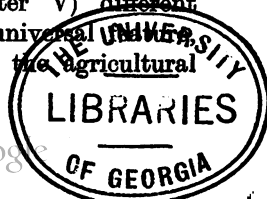
Introduction—Distribution of crops according to climatic  
zones—Stock-raising.

#### INTRODUCTION

THE economic basis of the west of Asia Minor is the cultivation of the soil. No attempt will be made here to discuss the system of land-tenure, but it may be remarked that, while large farms (sing. *chiftlik*) are found everywhere alongside of smaller holdings, they do not appear to have had an effect detrimental to the latter. The *chiftliks* are partly Crown lands, partly private estates. In the latter case they are to some extent still in the hands of the Turkish nobility, a class which has almost completely lost its former importance. As a rule, however, they are owned by Greek and Armenian capitalists or rich Turkish officials.

It goes without saying that intensive cultivation (fruit and vegetable production) is almost entirely in the hands of small proprietors. In the neighbourhood of nearly every town there are to be found either one or more belts of gardens, with small villas occupied for a longer or shorter period of the year by prosperous citizens. These are found chiefly in the plains within the Mediterranean belt. On the other hand the larger estates are devoted mainly to extensive cultivation and stock-raising. On these estates considerable areas of fertile land are used only for pasture.

As a result of varying natural conditions and the mixed composition of the population (see Chapter V) different methods of cultivation are in vogue. A universal feature, however, is that, except for the *chiftliks*, the agricultural



population is everywhere settled in villages, which of course vary considerably in size. Single small farms are practically not found. Summer and winter villages are less common in our area than in some other Mediterranean regions, though in many cases it happens that the inhabitants of a low-lying district migrate regularly in the hot season to a neighbouring mountain, where they live either in primitive houses or wattle huts or the like.

#### . DISTRIBUTION OF CROPS ACCORDING TO CLIMATIC ZONES

Next to the nature of the soil, which in the west of Asia Minor is especially varied in character, the climate has of course the greatest influence on cultivation, which it is consequently desirable to deal with according to the three main climatic regions distinguishable in our area (see also pp. 13-14).

##### *Pontic Region*

This region covers what has been called the First Zone in Chapters I and IV. Here, along the southern shore of the Sea of Marmara, lies a narrow belt of Mediterranean vegetation, with extensive olive groves, vineyards, &c., such as may be seen on the Kapu Dagħ peninsula, at Panderma, or at Mudania. Immediately south of the coastal range, however, the conditions change. We have first of all a fertile belt of corn-land, behind which rises the mountain country known in ancient times as Mysia with its forests and many scattered patches of cultivation at varying altitudes. Within this mountain area lie a number of highly cultivated plains, the largest being that of Balikesr.

Cereal cultivation is general throughout the whole of this Pontic region. Wheat and barley are the staple crops, the latter forming an export commodity. Rye is grown in the Susurlu Chai valley, and some oats also are raised. Of prime importance is maize, which, owing to the moist summer climate, is extensively grown and provides a surplus for export. To the crops already noted must be added broad beans, a large quantity of sesame (e. g. at Balikesr and in the

Susurlu Chai valley), linseed and flax (round the Abulliond Lake). Experiments in the cultivation of sugar-beet at Sabanja have apparently been unsuccessful, but others at Eskishehir show considerable promise. There is extensive cotton cultivation at Balikesr and Kepsut and in the Dagardy district. Opium, the congealed juice of the seed-capsules of the garden poppy, is an important crop, at Balikesr, in the Susurlu Chai valley, at Balat, and from the latter place to the Ak Dagħ above Simav, where poppy-fields are found at an altitude of nearly 5,000 ft. On the other hand vine cultivation is unimportant, and raisin cultivation non-existent. Figs, olives, and other fruits characteristic of the seaboard are almost entirely absent. A few olives are found in the interior of Mysia at a few points, at Brussa, Abulliond, Eski Manyas, and Kepsut. Such fruit cultivation as is carried on does not depend on artificial irrigation. The most important fruits are the apricot, round Brussa, and the walnut, near Simav. Special mention should also be made of the mulberry, which is grown mainly on the slopes at the edges of the depression behind the coastal range, at Abulliond, Brussa, and Inegöl, but also on the coast in the Kapu Dagħ peninsula and at Panderma as well as in the mountains, e.g. at Balat. The head-quarters of the silk industry to which the presence of the mulberry gives rise is Brussa.

Large quantities of vegetables are grown round the Gulf of Izmid and are exported to Constantinople. Tobacco is also cultivated here.

### *Mediterranean and Transition Regions*

The Mediterranean climatic region covers the whole of the country included under the Second, Third, and Fourth Zones in Chapters I and IV. That is to say, it comprises the whole of the west and south-west of our area up to the watershed between the Marmara and the Aegean on the north and to the mountain rim on the east and south. This region is capable of great development and contains extensive valley plains of great fertility, of which those of the Hermos and the

Maeander are the most important. Besides these valleys there are wide stretches of hill country which, though less fertile than the alluvial plains, also provide extensive areas of cultivable land. Generally speaking, these plains and hills are already well populated and cultivated, so that further economic development will depend less on extending the areas under cultivation than on improving the methods of production. The mountain districts are of course less cultivated and more sparsely populated, though to varying degrees dependent on geological formation and altitude.

The climate typical of the Mediterranean belt is characterized by a hot summer and mild winter, with only short spells of frost, and these not severe. The temperature, though far removed from tropical conditions, is therefore very favourable to the growth of vegetation. The winter temperature is too low, and the hot season too short, for the cultivated plants of the tropics, such as the palm, banana, cacao, coffee, &c.

Even more characteristic than the temperature is the rainfall. In winter, spring, and autumn there is an abundant, or at any rate an adequate, rainfall, which, coupled with the sufficiently high temperature of these seasons, fosters a luxuriant growth of plants and trees. The summer on the other hand is almost rainless. Consequently the development of plants which depend on a continuous supply of moisture is precluded, unless they come to fruition within the rainy season, as happens in the case of cereals which are harvested in May or June. Indigenous perennial plants and annuals which normally ripen in summer accommodate themselves to the dryness of the summer, while others coming under the same categories which have been imported from regions with a moist summer climate are confined to particular moist districts or else have to be artificially irrigated. Artificial irrigation for such foreign plants plays an important rôle in the Mediterranean area, while the indigenous plants are independent of it.

From what has been already said it is obvious that the

Mediterranean region of western Asia Minor is by no means uniform in respect of climate and vegetation. Generally speaking, the dryness of the summer becomes progressively more pronounced from north to south. On the other hand from the coast inland the rainfall decreases, and the winters become colder, so that in this direction an approximation may be noticed to the conditions of the central plateau. The region of transition to the plateau is taken here along with the western areas instead of being treated in conjunction with the plateau proper as has been done in the description of the physical features of the country and distribution of forests in Chapters I and IV. It may be added that even in the coastal districts the typical Mediterranean climate is confined to the low-lying areas. At an altitude of about 1,000 ft. a transition begins to a type of climate and vegetation which recall those of the Pontic region and ultimately of central Europe.

Cereals are grown without irrigation throughout the whole of the western region. They occupy by far the greatest part of the cultivated plains and are found high up the mountains. Summer-ripening cereals are practically not grown except on the upper mountain-levels. As a rule tillage and harvesting are still carried on by the primitive methods. Similarly threshing is done in the open on paved threshing-floors by horses and cattle, which tread out the grain and cut up the straw by means of sledges set with sharp stones or spikes. The chopped straw (*saman*) is a staple feeding-stuff for horses and oxen.

The most important cereal crop is wheat. Then comes barley, the chief grain-food and the only kind of cereal which is exported in any considerable quantity from the west of Asia Minor. It stands third in the list according to value among the exports from Smyrna. The chief areas of barley cultivation are the plains along the west coast, the Hermos plain, and the middle basin of the Maeander. Rye is more commonly cultivated than in most other Mediterranean countries, especially in the mountains, e.g. on the Kosak



hills, on Tmolos and Messogis, in the hill country drained by the upper Hermos, in the middle Maeander basin, and in Karia. Oats on the other hand are seldom grown. Millet is cultivated mainly in the upland valleys of the Tmolos system but also in the plains round Alashehir and in Karia. Maize, introduced from America, is distinguished from the indigenous cereals in that it is a summer crop and requires a great deal of moisture. Consequently on the higher levels, especially on Tmolos and Messogis, where it has the advantage of rain in summer and can also be easily irrigated from streams, it sometimes is more important than wheat for the making of flour. It is also cultivated in nearly all the low-lying districts, sometimes with, sometimes without, irrigation. Mention may also be made of sorghum, which is grown in the Maeander valley and the southern districts of Karia.

The cultivation of pulses, especially broad beans, which are often planted in rotation with cereals, is also of some importance. It is carried on mainly in the plains of the lower Hermos and Kaikos (chick-peas are also produced in the latter area). There is a considerable export of broad beans. The common bean is largely grown round Alashehir and Kelles. Sesame, the most important oil-producing plant in the East, is extensively grown on the coastal plains, especially in the southern parts of Karia and also in the neighbourhood of Denizli. In the latter district there is also a large production of aniseed.

Plants grown for fodder (vetches, lucerne, and clover) are found particularly in the plains of the lower Hermos and round Ak Hissar, in the Denizli district, and on the plateau of Davas in Karia.

The cultivation of tobacco is under the control of the Régie, which according to statute should receive the whole of the crop. A good deal of uncontrolled tobacco-growing, however, is carried on. Tobacco-fields are met with in the most diverse areas and at greatly varying altitudes, but as a rule only sporadically. They may be seen in the coast districts between Smyrna and the Maeander, round Mermere,

Alashehir, Kelles, Denizli, in the Maeander plain, and in the Karian highland, especially round Nikifer. The Anatolian product is excellent as cigarette tobacco and is a considerable item of export.

More important, however, is the cotton crop, which is grown in all the cultivated plains of the west, mainly in the upper Maeander plain (round Nazly and Seraï Kõi), to a slight extent in the lower Maeander plain, and also in the mountains, e.g. round Leïna in Karia and on the Ahar Dagħ (at a height of about 4,000 ft.). This crop is capable of still greater development. It depends on the district whether or not the cotton will require irrigation. Hemp is also grown in the Maeander plain, especially round Nazly, and in the plain of Kelles. The growing of madder and other dye-producing plants was formerly very extensive but has been almost killed by the introduction of aniline dyes. Madder is still grown round Gelembe. Liquorice root grows luxuriantly in the Maeander plain and at Alashehir and is exported.

One of the staple products is opium. The great fields of this plant are an entrancing sight in spring, when it unfolds its blossoms varying in hue from white to violet. The chief areas of opium cultivation are not those with the typical Mediterranean climate but the northern and eastern districts which show a transition to the climate of the Pontic region and the plateau. Mention should be made in this connexion of the plains of the lower Kaïkos, Mermere, and Ak Hissar, of Alashehir and the hill country north of it, and of the plateaus of Ushak, Chal, and Davas. The export of opium from Smyrna is of great importance.

Of much greater economic value than all the products already mentioned, with the exception of cereals, is the cultivation of indigenous trees on unirrigated soil.

The characteristic cultivated tree of the Mediterranean region is the olive, which by reason of its fruit and the oil extracted from it is an indispensable article of food among the inhabitants of the Mediterranean zone. As an evergreen timber-growth everywhere adapted to the Mediterranean

climate the olive, without requiring any attention to speak of, thrives on the driest and stoniest soil and attains a very considerable height. It exhibits a phenomenon of economic importance in that one year it may produce a large crop and the next none at all. And this happens at the same time to nearly all the trees in an entire district. Consequently the crops vary very much from year to year over wide areas. Being a Mediterranean tree the olive can stand neither cold in winter nor too moist summers. The limit of altitude at which it is found rises from about 1,300 ft. in the Kaikos basin on the north to about 2,000 ft. in Karia. Where it has commercial value the olive forms extensive plantations, mainly on the lower mountain-slopes, on diluvial hill soil, and on the stonier edges of the plains, particularly on flat outliers. In the fertile alluvial soil it gives place to crops of greater specific value. Even here, however, it may be seen less widely distributed, often among vines. Conversely vines and cereals are often planted in the shade of olive groves.

The olive groves, while mainly distributed along the slopes and the edges of the plains near the coast, also extend far into the interior along the great depressions. Single outposts of no economic value are found still farther inland till they disappear under the influence of the continental climate.

Large olive groves cover the edges of the plains and the hills from the shores of the Gulf of Edremid to the Hermos mouth. Along the Kaikos plain they are but sparsely distributed as far as its upper end and the neighbourhood of Kerasun. Along the Hermos plain they are not of great importance, though they are found at intervals as far east as Alashehir. On the coast, in the neighbourhood of Smyrna, though they are generally found, their importance is diminished by the cultivation of the raisin-grape but increases again in the Kayster plain as far as its upper limit, and still further on the edges of the Maeander plain. On the south side of the latter especially olives occupy wide stretches of the landscape. Above Nazly they gradually disappear, and in the Denizli basin they reach their eastern boundary. They also extend

up the side-valleys of the lower Maeander. In the interior of Karia their southern and eastern limit is roughly the line Milas-Leina-Mesevle-Balania-Karajasu. On the sparsely populated Karian coasts the cultivation of the olive is not extensive. On the south coast in particular it is quite unimportant.

Generally speaking, the olive crop throughout the west of Asia Minor is not more than adequate to the demand made on it for home consumption, and there has hitherto been little of a surplus for export.

Much more important for export are the vine and the fig. The former finds the most favourable conditions everywhere within the Mediterranean area. The cultivation of it is nearly universal on the Mediterranean seaboard of western Asia Minor—at least in the south of Karia—and also in the mountain valleys up to a height of over 3,000 ft. It is usually planted on flat or gently sloping fertile ground with considerable depth of soil. There are few vineyards, as vines in this dry summer climate cannot thrive on dry ground. As a rule they are allowed to grow in bushes without special attention.

As the Moslem religion forbids the use of wine it is prepared only where there is a numerous Christian population, and this Anatolian wine is of no great value and not suitable for export. There is, however, no doubt that as good wine could be produced in Asia Minor as in Greece. The Greeks in Asia Minor, contrary to the custom of their compatriots in Greece itself, drink little wine and prefer to indulge in the much more pernicious raki. The grape crop is therefore not devoted to any considerable extent to the making of wine. On the other hand grapes are the favourite fruit of the country, and great quantities of them are eaten. They are also used by the Turks in the preparation of sweetmeats and a kind of preserve. All these modes of utilization are supplied by the small patches of vine cultivation found here and there throughout the country. Further, grapes in the form of raisins are the most important fruit which the country

produces. They constitute the most valuable commodity of export from Smyrna. The grapes are spread on the ground after the harvest and dried in the sun. This is of course possible only in a climate like the Mediterranean, where there is a continued period of practically rainless weather after the harvest. The chief areas of raisin culture, in which it practically excludes all other forms of cultivation, are primarily the Hermos plain from a point above Manisa east to Salykhly and including the plain of Nif, and secondly the peninsula of Erythrae west of Smyrna, with the towns of Vurla and Cheshme. The latter area produces the best quality of raisins. They are also grown, however, in the Kayster plain and, to a less extent, in the other plains of the west. Thus the 'Rosaki' raisin is produced round Edremid and black raisins in the plains of the Maeander as far east as Nazly.

The fig comes second in the list of fruits exported from Smyrna. Like the grape it is everywhere grown without irrigation within the limits of the Mediterranean climate and is nearly always to be found in the orchards which surround most of the towns and villages. Its export depends chiefly on the produce of the great continuous orchards which extend in the first place in the Maeander plain from Sokia east to Ortakche and up the side-valleys, secondly in the Kayster plain from Ephesus to Baliamboli, and lastly on the coasts of southern Karia. In the great plains these orchards (like all cultivated trees) are found mainly near the valley-edges, without, however, extending up the mountain-slopes like the olive groves. The middle of the plains is usually occupied partly by vine cultivation, partly by tilled land.

Almonds and carobs have a certain importance in the coastal area of the south Karian district. The mulberry is found in considerable numbers in the most northerly part of the Mediterranean region, round Bergama, and there is some silk manufacture in that place. Elsewhere only isolated trees are met with. Irrigated gardens, generally of no great extent, with luxuriant crops of all kinds are frequently found in the plains, at the foot of the mountains, and in the valleys.

These produce apples and pears, cherries and agriots, quinces and pomegranates, lemons and oranges. Among the fruit-trees are garden trees such as the cypress, poplar, and plane, with vegetables of every sort, especially onions and garlic, cucumbers, gourds, melons and water-melons (the three last mentioned are also grown in unirrigated fields) surrounded by bitter aloes and cactuses. Water for irrigation is drawn partly from springs, partly from wells. On the mountains the gardens are more extensive and depend less on irrigation but produce fewer varieties of trees and plants. On the whole these irrigated gardens in the west of Asia Minor have as yet attained little economic importance, and their produce is mostly consumed locally. Specially noteworthy are the gardens round Smyrna, Manisa, Nif, Bergama, Edremid, and in other coastal districts, and also in the interior, round Alashehir and Denizli, the latter place being the chief garden district in the west.

The cultivation of oranges and lemons (the latter not worth mentioning except as regards Sultan Hissar) is quite unimportant. On the other hand special note should be made of the cherries of Manisa, the agriots of Parsa and Gediz, and the cucumbers of Menemen. One of the commonest fruit-trees is the walnut, especially on the higher altitudes, in the high valleys of Tmolos, on the plateaus of Ushak, Burgaz, and Davas, at Khonas, in the Karian mountains, and also at Baliamboli in the upper Kayster valley, and in the Kaikos plain.

### *The Plateau Region*

The steppe country consists of plateaus of roughly 3,300 ft. altitude, dominated by isolated mountains which from a height of 4,300–4,600 ft. rise above the climatic conditions of the steppe into a moister atmosphere. On these mountains accordingly cultivation, which is naturally of no great importance here, is carried on under central European conditions, e.g. on the Murad Dagħ or Ahar Dagħ. The scarcity of rainfall on the plateaus itself implies an absence of forest.

Timber-growth therefore is practically confined to the stream-banks, the springs, and the moist depressions. Consequently cultivated plants which require moisture are excluded, and the cold of winter prevents the growth of perennial and winter-ripening plants which are sensitive to cold, while the heat of summer and the great amount of sunlight foster the growth of crops which ripen in summer. There is no fertile loess in this plateau region, and consequently the extent of cultivable soil is comparatively small.

The rainfall is confined to spring and early summer, and for that reason the cultivation of cereals and a few other crops which ripen within these periods is possible without artificial irrigation in so far as the soil is adapted to it. Cereals therefore, especially wheat and a certain amount of rye and, after these, some opium and tobacco, constitute practically the only crops worth mentioning. Rice is grown in the Porsuk Chai valley. A considerable quantity of cereals has been exported since the building of the Anatolian railway. Only here and there, where water is available for irrigation, as at Kutahia, are gardens to be seen with fruit cultivation. In such cases, however, owing to the cold in winter, Mediterranean varieties of fruit are absent.

As cereals grow without irrigation the latter plays no important rôle in this area. Water-wheels have been observed, however, on the Porsuk Chai below Kutahia. It can be settled only by practical experiment whether the production of cereals could be developed by artificial irrigation in such a way as to obviate failure of crop and show an economic profit, and the same may be said of the possibility of introducing varieties of other crops such as cotton. It must, however, be borne in mind that the choice of plants for cultivation is restricted not merely by the slowness of rainfall but also by the low winter temperature. Besides, the extensive development of irrigation is prevented by the fact that the few perennial rivers flow mostly in deep narrow valleys. Above all, any considerable expansion of cultivation will be hindered by the lack of cultivable ground.

## STOCK-RAISING

Only in the moist Pontic climate of Mysia are the conditions of stock-raising similar to those of central Europe, for it is here only that there is an abundant growth of grass and plants. In the Mediterranean and plateau regions it is carried on under natural conditions appreciably different from those of Europe. Here the dry summer season prevents the development of meadow-land except in the moist areas subject to the flooding of a few rivers, especially the Hermos in its lower reaches and the Porsuk Chai, or in a number of upland valleys such as those of the Tmolos system or the Ahar Dag. These meadow-lands, however, are too limited in extent to alter the general character of stock-raising within our area. It is not possible to make hay in any considerable quantity, and chopped straw, grain-fodder, and cultivated fodder-plants are sufficient only for the feeding of draught-animals, not for ordinary stock. Consequently stall-feeding of the latter is impossible, and the herds remain throughout the year in the open so far as the climate allows it. They find their sustenance in pasture on fallow and stubble fields, and also on the uncultivated plains, which, with the exception of the areas where there is dense forest or scrub, serve almost universally for stock-pasture. Since the scanty and sparse grass vegetation of these plains is renewed only once a year—in the depressions during winter and spring, and in summer on the higher altitudes—comparatively large areas are necessary for the feeding of the herds, and the animals must move about to a greater or less degree and exchange the districts on which the pasture has been eaten down for others which have not been used in the same year. This is generally done by migrating from the lowland to the upland pastures. From these conditions it results that stock-raising has a nomadic character which bears some resemblance to that practised in desiccated regions properly so called. This militates against any close economic and functional connexion between stock-raising and agriculture as well as against the



possibility of any considerable use of animal manure in farming.

The Mediterranean and steppe systems of stock-raising react on the limited Pontic area, so that, though the methods followed in that region approximate more to those of central Europe, they do not do so to the extent which would be permitted by the natural conditions of the country.

The nomadic character of stock-raising is naturally most pronounced in the case of the genuine nomad population who live all the year round in tents. These nomads change their pasture-grounds according to the seasons, frequently to considerable distances, by no means in an arbitrary fashion, however, but according to regular custom and by arrangement with the settled inhabitants of the districts in question. Except for a few small tribes the nomads are nearly all Yürüks. It has been already noted that some of the Yürüks have now settled down. These must therefore, from an economic point of view, be considered apart from the nomads proper, though they have not lost their identity and the consciousness of their Yürük origin. The settling down of Yürüks has of course, while limiting the extent of the land used for pasture and diminishing the numbers of the nomads, also reduced stock-raising in favour of agriculture.

The animals composing the herds of the nomads are mainly sheep and goats, to which must be added transport animals. Horses, asses, and, less frequently, camels are not merely employed for the use of the nomads themselves but are also raised for the market. Oxen, which are difficult to move about, are as a rule kept to no extent worth mentioning. The herds and camps are guarded by large half-wild dogs.

Stock-raising among the settled agricultural population has also a nomadic character, though not so pronounced as among the Yürüks. That is to say, their herds have to change their pasture-grounds in the neighbourhood of the villages, to a greater or less extent according to the circumstances of the district. In Mysia this takes place naturally to a less extent than elsewhere.

In the Pontic region, with its rich grass vegetation, the breeding of cattle is of course important. In the other climatic areas cattle are, with the exception of the oxen necessary for ploughing and cart-work, only occasionally found in large herds, e.g. in the northern part of the Mediterranean zone, in the plains of the Kaikos and the adjoining coasts, in the Kosak hills, in the grassy upland valleys of Tmolos, and here and there in the plateau country and in Karia. There are also a considerable number of buffaloes in Mysia, in the lower Kaikos plain, and on Tmolos.

Among stock-animals practically the sole producers of meat, milk, hides, wool, and hair are sheep and goats, which are found in large numbers everywhere both among the nomads and among the settled peasantry. Pigs are hardly ever kept, even by the Christian population. On the steppe plateaus the Angora goat is widely distributed. Its long hair forms the valuable article of export called mohair. Wool and hides are used in native manufacture and are also exported, though not to any considerable extent.

As everywhere in southern lands, the donkey plays an important rôle as a beast of burden. In agricultural economy in Asia Minor donkeys are indispensable. They are consequently everywhere found in large numbers. They are not, however, bred in large herds as is the case with horses, e.g. on the chiftliks in the coastal region and on the mountain pastures. The Anatolian horse is small but extraordinarily wiry and, as a riding or baggage animal, extremely serviceable. There are fewer horses in the plateau region than elsewhere. Mules are not very common and are little bred, being usually imported from the islands, Lesbos, Khios, Samos, &c.

The characteristic beast of burden in the East, the camel, is met with in large numbers as soon as one enters Asia Minor at Smyrna, where they are employed in the transport of goods through the narrow streets between the railway station and the harbour. In the interior also camel caravans are frequently met with, the animals tied together one behind the other with a tiny donkey at the head as leader. This is

true especially of the Mysian and steppe regions, not of Karia, where camels are rare. In the districts where they are used they are found not merely on the chaussées in competition with railway transport but also on remote mountain tracks. On the outskirts of the larger towns there are special camping-grounds set aside for camel caravans, e. g. in Smyrna at the caravan-bridge. It is worth noting that, contrary to what might be expected and unlike the Mediterranean and Pontic areas, the steppe region is poor in camels. The Anatolian camel is the one-humped dromedary and is often a powerful animal. It is employed exclusively as a beast of burden, not as a riding animal. Camel-breeding is for the most part in the hands of the Chetmi or Chepni tribe, which was originally nomadic, but has now largely settled down. This tribe furnishes most of the caravan guides and is found here and there in the districts already mentioned, particularly in a number of villages west of Balikesr. Herds of camels may also be seen grazing on the driest pasture-land round the plains of the Kaikos and Hermos, in the delta plain of the Maeander, and round Mughla in Karia.

Lastly mention must be made of the universal practice, general even among the nomads, of keeping fowls. In so far as meat forms an article of diet among the population (and it does so only to a very limited extent), fowls form a chief source of it. Eggs are universally used for food and are also exported in considerable quantities from Smyrna and the Marmara ports. Owing to the favourable climate and the abundance of cereal feeding-stuffs the rearing of poultry and the export of eggs should develop greatly in the future. Among the fowls kept, turkeys are fairly common. Ducks and geese on the other hand are rare.

## CHAPTER VII

### INDUSTRY, TRADE, AND COMMERCE

Introduction—Industry—Trade and commerce.

#### INTRODUCTION

UNTIL quite recently most of the commodities in common use in Anatolia were produced locally. Of late the products of native crafts have suffered from competition with imported articles, particularly in districts within reach of the railways. Native artisans, however, still play an important rôle in the bazars, where they may be seen at work in open booths. The various trades are generally confined to separate quarters or streets. The native leather-work deserves special mention for its distinctive and artistic qualities, as does also, in many places, metal-work of all kinds. In connexion with the latter, mention may be made of the silversmith's art in Kula, practised by Circassians mostly, and reminiscent of Caucasian style. The repair of more delicate European articles, such as clocks and watches, is in many cases already in the hands of the Greeks, who are coming more and more to monopolize different crafts. It is the Greeks also who carry on most of the itinerant trades, and there are quite a number of prosperous Greek settlements, the men of which are almost continually engaged as artisans away from home. In particular the building trade is largely in the hands of such travelling artisans.

#### INDUSTRY

There is as yet no clear-cut distinction to be drawn between industry and handicraft. Industry, in the European sense of that word, is little developed except in the case of a few manufactures, most of which are to be found in Smyrna. What may be called cottage or village industries are, with

a few exceptions, the general rule. They are mainly practised on a small scale and occupied principally with the primary processes of preparing native raw materials.

Even mining is frequently carried on by means of small open workings. In the case of emery these are for the most part in the hands of a few large concessionaires. There is, however, one large modern mining concern in our area, that of Balia Maden, where there is extensive plant for the preparation and smelting of the ore. Similar plant on a small scale is to be found also at the antimony mine of Emirli in the upper Kayster area. As a rule mineral products are exported in the raw state. There are iron-foundries, however, in Smyrna. Here and there primitive lime-kilns for local needs may be met with. Quarrying might have some importance in the future, especially near the coast. (For further details on mineral products see Chapter III, pp. 79-82.)

Pottery is an important industry in many districts, e.g. at Chanak Kalesi, Kutahia, below Aidin, and at Milas. Most of the earthenware pottery used in the country is of native manufacture. Sometimes it is tastefully ornamented, sometimes quite plain, and frequently considerably different in shape and design from that of Europe. Special reference should be made to the huge jars, often as high as a man, common also in modern as in ancient Greece, which are used for storing water, oil, wine, cereals, &c. With these may be mentioned the eminently practical ewers of porous unglazed clay in which the water by evaporation remains cool and fresh. All these articles of pottery are extremely cheap. In Kutahia, besides the foregoing and beautiful faience ware, tiles with fine painted decoration are manufactured in a few small workshops. The potters work according to patterns taken by photograph in the ancient mosques and transferred to moulds. Most of the tiles are exported to Europe.

Some reference has been made in an earlier chapter to the timber trade, saw-milling, and charcoal-burning (see pp. 83 and 84.) Inlaid woodwork is produced in Afium Kara Hissar.

The greater number of the woodworkers in the bazars are not natives of Asia Minor, but come from farther east.

The extensive reed swamp of the Simav Lake gives occasion to the development of a considerable industry in the plaiting of mats. These mats, which are in great demand for carpets, are exported throughout Asia Minor by caravan.

In districts where the olive flourishes oil-pressing is fairly extensively carried on, and there are several pressing-factories in some of the coastal towns of the west. Olive-oil soap is manufactured in small workshops.

Flour-mills are frequently met with throughout Anatolia. These are generally small water-mills for local needs, and are found as a rule on the mountain streams. In a district where there is a general dearth of mill-streams a single abundant stream or a strong spring with a considerable fall may sometimes drive a dozen such mills. Sometimes there is a village attached to these mills; frequently, however, they form settlements by themselves (e.g. Deïrmenyakasy in the Dalaman plain). The millers are often Greeks. In the coastal districts where there is little water windmills are used. These are usually of Greek type, small stone-built structures with a large number of small vanes. They may be seen often in dozens on a bare hill in the vicinity of a town. Wooden windmills rotating on a shaft are common in Mysia, no doubt an importation by immigrants from the Balkans. Steam-mills are to be found in Smyrna and also in Sokia and Denizli. Small ones are met with in a few other towns mainly along the coast.

Other *fabrika*, as all concerns in which there is a small steam-mill are called in Turkey, are found here and there in the more thickly populated and fertile basins of the Kaikos, Hermos, Kayster, and Maeander. They are used mainly in the primary processes of manufacture, such as cleaning cotton. In the Maeander plain there are a number of small factories belonging to the firm of MacAndrews and Forbes for producing liquorice.

Besides those already mentioned there are factories in

Smyrna, at Izmid, and Karamursal for the manufacture of cloth.

Much more important than these as yet little-developed European industries are tanning and the native textile industries, including dyeing. Tanning is carried on in many towns, particularly in Smyrna, Aidin, Manisa, Bergama, Ushak, and Kutahia, and many kinds of leather goods are manufactured, such as sandals, slippers, riding-boots, belts, harness, saddles, purses, &c. Trakhala, a large closely packed settlement picturesquely situated beside a strong spring in a narrow mountain valley south of Soma, is entirely a tanning centre. It belongs to a special type of industrial settlement, of which a few examples are met with in the west of Asia Minor. These settlements are compactly built populous villages lying remote from the highways of traffic in barren mountain districts and depending on some particular trade or occupation. They are apparently refugee settlements colonized in troublous times, whose inhabitants, through lack of cultivable land and connexion with the outside world, have devoted themselves to some industry. These settlements are invariably found beside a strong stream or spring, to the water of which special qualities come to be attributed for the purpose of the industry in question. (For the valonia trade see pp. 84-5.)

Just as the tanning industry is found in Trakhala, so in Kady Kõi, a remote village of considerable size on the slope of Buba Dagħ (south of Seraï Kõi) there are the dyeing and weaving of cotton stuffs, giving a means of livelihood to a Turkish population of 10,000-15,000 souls. It is worth noting that before the war the cotton yarn was obtained from England (mainly from Hindley in Lancashire) and the dyes from Ludwigshafen. The yarn was then dyed in Kadykõi and woven on ancient looms, and the materials thus prepared were distributed far and wide in Asia Minor for the making of clothing. The patterns had no great originality, but the cloths were said to be considerably stronger and also cheaper than those produced in Europe. The latter result

was of course possible only by reason of the extraordinarily low standard of comfort among the native workers and the consequent low rate of wages, which more than counter-balanced the extra cost involved in importing the raw material from Europe and the primitive method of production. The original source of the development of the industry at Kadyköi was no doubt dyeing, which is always found where there is a suitable water-supply. A similar development of industry is found at Bulladan, where woollen fabrics are woven and embroidered with silk, as well as woollen cloths with yellow silk threads worked into them.

Spinning-mills are found in Smyrna, Bergama, Brussa, and Afiun Kara Hissar. The linen industry is carried on chiefly in the sanjak of Izmid. The spinning of silk in Brussa is very important, and the town is the centre of the Anatolian silk industry. It is mostly in French or Swiss hands. The weaving of silk and cotton in Brussa on the other hand is almost entirely a cottage industry and is declining in importance. Bilejik produces chiefly silk velvet.

In the case of the well-known carpet-making industry (which is usually locally connected with the dyeing of the necessary wool) the type of settlement met with at Trakhala and Kadyköi is found only in fairly remote provincial towns, though these are as a rule not so inaccessible or so completely industrialized as the refugee settlements already mentioned. Smyrna is less a manufacturing centre than an entrepôt for the 'Smyrna' carpets. The latter are produced in a number of small towns scattered throughout Lydia and Phrygia and sometimes remote from the railway. Mention may be made of Bergama, Ak Hissar, Górdiz, Demirji, Kula, Takmak, Ushak, Kutahia, and Afiun Kara Hissar. In a few cases the carpets are also produced in the villages adjoining the manufacturing centre (e.g. round Kula and Takmak), but for the most part the industry is confined to the towns. For private use of course carpets are also sometimes made by the peasants in their own homes and by the nomads in their tents, and occasionally these may be sold. Old carpets



are notoriously scarce and dear, as their value is now universally known. Isolated specimens may still be found in remote village mosques. The retail trade in carpets is now almost entirely in the hands of Greeks and Armenians, and the women and children employed in the industry also belong in a good many cases to these nationalities. The total number of workers engaged in carpet-making in 1912 was about 40,000, most of the produce of whose labour was monopolized by a single Smyrna firm with head-quarters in London.

The system followed in the carpet industry is generally as follows. The large dealers (mainly in Smyrna) give their orders to the manufacturers in the small towns and at the same time supply the patterns. The latter are usually made in Europe in imitation of old Turkish designs. The wool is dyed in the manufacturing centre with European (aniline) dyes. The manufacturer distributes the orders received from Smyrna among the different heads of the carpet-making families or the foremen in the small cottage workshops. The work is done by women and by children (from eight years old and upwards) who labour early and late in close rooms and often present a spectacle of pitiable squalor and physical degeneracy. They sit in front of primitive frames on which the warp is strung. Each thread is drawn through singly, knotted and pulled close by an instrument resembling a comb, after which the threads are cut off level with the rest of the pile. (For some further details on the carpet industry see Vol. I, Chap. VI.)

In Kula formerly the dyeing of the wool reached its highest development as regards beauty and durability. The industry appears to have been in the hands of the Greeks of that place. The inhabitants of Kula are said to have had special secret recipes for vegetable dyes. The water at Kula is also said to be specially suitable for dyeing. The old recipes have not merely been superseded by the introduction of European aniline dyes, but are even said to have already completely passed out of knowledge. To this fact chiefly is attributed the decline in the prosperity of the town.

Besides the places already mentioned Gelembe and Aïdin are noted for the dye industry. In the former place the madder grown locally is used.

A few general remarks may be added on fisheries. On the coast and in the adjoining lakes and lagoons fishing is general wherever there is a Greek population. The market for the fish is usually confined to the coastal districts, and salt-water fish are scarcely ever sent into the interior. Fishing is also a considerable industry on some of the inland lakes, e.g. on the Manyas Göl, Abulliond Göl, Mermere Göl, and Bafy Deniz. The Cossack colonists on the lake first mentioned cure their catches in large quantities for export, and there is a considerable trade in crayfish and other varieties from the Abulliond Göl.

Practically no fishing takes place on the rivers. The sponge-fisheries are monopolized by the Greek inhabitants of the western islands.

#### TRADE AND COMMERCE

The import trade of the west of Asia Minor consists in the main of manufactured goods. In the matter of foodstuffs the country is practically self-supporting, and the only imported commodities which come under that heading are coffee and sugar. The chief imports are cotton goods, thread and yarn, sugar, coffee, timber and wooden goods, fancy goods, petroleum, ironmongery, and cashmere. Raisins are the most valuable export. Then come figs, barley, valonia, carpets, cotton, opium, tobacco, various seeds, liquorice, beans, olive-oil, and emery. The greater part of these exports before the war went to Great Britain, which received a majority of all the commodities mentioned except cotton and tobacco. Of these the former went mainly to Austria-Hungary, the latter for the most part to the United States.

By far the greatest part of the import and export trade passes through Smyrna. It is mainly in Greek hands, and Greek is the commercial language far into the interior. Apart from Smyrna the chief ports in our area are Izmid,

Gemlik, Mudania, Panderma, Artaki, Chanak Kalesi, Akchai, Aivalyk, Dikeli, Fochatyn, Cheshme, Scalanova, Kuluk, Budrum, Mermeris, Yüksekum, and Makri. Few of these ports are provided with good lading facilities, and much of the traffic from them is carried in small coasting vessels (*kaïks*). These *kaïks* are mostly owned by Greeks from the islands. They are sometimes built on the west coast (e. g. at Fochatyn).

## CHAPTER VIII

### COMMUNICATIONS

Railways—Roads and tracks—Postal and telegraph service.

#### RAILWAYS

COMPARED with other parts of Turkey the rich and thickly populated western region of Asia Minor has the advantage of an extensive network of railways. Except for the Anatolian line, which connects Constantinople with the central plateau and is continued eastwards as the Baghdad railway, and the narrow-gauge line from Mudania to Brussa all the lines in our region converge on Smyrna. They are of normal gauge and belong to two companies, one English, one French.

1. The main line of the English railway, owned by the Ottoman Company, runs from Smyrna via Ayasoluk and Azizie, passes the watershed between the Kayster and Maeander by a tunnel, and then runs up the north side of the Maeander valley via Aïdin and Nazly to Seraï Kõi. Some miles beyond Seraï Kõi it ascends to the transition plateau country and runs to Dineir, which was for a good many years the terminus. An extension has lately been completed to Egerdir.

Various branch lines serve districts lying off the main track. Two of these serve the suburbs of Smyrna, Buja and Sevdî Kõi respectively. Another leaves the main line at Torbaly and runs up the Kayster plain via Bayndyr (where it sends off a branch south to Tire) to Ödemish. A fourth runs from Balachyk to Sokia, a fifth from Gonjarly station to Denizli, and a sixth across the upper Maeander plain to Chivril.

2. The French line, known as the Smyrna-Kassaba and Extension runs from Smyrna via Menemen, Manisa, Kassaba to Alashehir, where it mounts to the transition plateau region.

Across this region the line runs by Ushak to Afium Kara Hissar.

A suburban line branches from the main track at the head of the Gulf of Smyrna and runs to Burnabad. An important branch line leaves the main line at Manisa and runs via Ak Hissar to Soma, which until 1912 was the terminus. In 1912 the extension of this branch was completed to Panderma.

Besides the lines indicated above there are several light railways in use, e.g. that from the Manjlyk mines to Balia Maden, thence to Otmanlar and possibly to the edge of the Edremid plain, and that from the lignite mines at Meriantepe near Sokia to Plaka.

The working of the main lines and their branches is extremely primitive judged by European standards. Goods traffic is unimportant except after the harvesting of the chief crops. Most of the trains carry both goods and passengers and are extremely slow. Unless in the neighbourhood of Smyrna there is generally only one such train per day in each direction. For this reason local traffic makes little use of the railway. Export traffic by train might be greatly developed if there were good lateral roads, which at present do not exist.

Apart from the railways the only regular system of goods and passenger transport is a sort of parcels and passenger post carried by private contractors between the larger towns. The service takes place once or twice a week by horse or mule caravan and for travelling is as a rule used only by the poorer classes. Generally speaking, at a distance from the railways the traveller or trader is obliged to hire animals and a guide.

### ROADS AND TRACKS

There are only a few trunk chaussées in the west of Asia Minor. Carriage-roads for local communication are practically unknown, and local wheeled traffic is confined to that carried in the more level districts by the small strongly built

ox-carts used by the peasants in farm work or for conveying goods to the nearest market.

It must be added that such *chaussées* as exist are partly unfit for traffic. Often they are incomplete, through being left without metalling or with some of their stages unfinished. Generally they are in disrepair. Bridges are frequently lacking, having in some cases never been built, in others having been swept away by floods. It is therefore often necessary, with wheeled vehicles particularly, to leave the road for long stages and go through the fields, crossing the streams by fords. Frequently even the original horse-tracks have been ruined by these impracticable *chaussées* to the considerable detriment of traffic.

It is accordingly not surprising that even on the *chaussées*—except for those in the immediate neighbourhood of the larger towns—one very seldom sees one of the native passenger-wagons, and practically never a carrier-wagon. These wagons are either the native carriages (*arabas*), used as a rule only by women, or else obsolete coaches of European origin. Passenger and goods traffic in districts remote from the railways, and even to some extent beside them, is, on account of the imperfect organization of the latter and the high tariffs, almost entirely carried on the backs of riding and pack-animals, which for long journeys are frequently combined in caravans. For it must be noted that travelling in Turkey even in peace time sometimes leaves a good deal to be desired in point of safety, and bands of brigands have in the past from time to time been able to terrorize whole provinces. This state of affairs has of course been accentuated by the war. It may be added that piracy on lonely stretches of the coast has not yet entirely disappeared.

There are still a large number of pack-routes which are paved with large stones and date from mediæval or, in some cases, from ancient times. The majority of these are no longer practicable owing to the shifting of the paving-stones. Generally speaking, the horse-tracks are simply beaten paths, which, particularly in the rainy season, are frequently in

a shocking condition. Sometimes the traveller sinks in the mud, while on the limestone hills it is impossible to proceed at a greater pace than a mile and a half or less in the hour.

Whereas most of the modern bridges fail to withstand the floods, a number of ancient stone bridges with pointed arches are still used for traffic, wheeled transport, however, excepted. For the latter these bridges are too narrow and steep. There are usually ferries across the large rivers at much-frequented points. Otherwise where there are no bridges the streams have to be forded, and it often happens that traffic is interrupted for days or even weeks during the rainy season. Apart from the ferries, inland water transport is found only on a few lakes. Of the latter mention may be made of the Manyas Göl and Abulliond Göl, which drain into the Sea of Marmara and are navigated by row-boats. The Abulliond Göl is also navigated by kaïks. Reference in this connexion should also be made to the Köijigez Lake in the south of Karia with its port of Yüksekkum, to which large sea-going kaïks come in connexion with the timber trade.

#### POSTAL AND TELEGRAPH SERVICE

The letter-post service is very slow and irregular in the interior of the country. Post offices are found in all centres which are the head-quarters of kazas. Stamps, however, can very often not be obtained in these post offices, and a supply must be bought in the capital. All the kaza head-quarters also have telegraph connexion, which works in quite satisfactory fashion, but the necessity of using the Turkish language in telegraphing from the less important centres is again a serious difficulty for Europeans. The Latin script can be used only in communications to or from the capitals of vilayets and a few other places, mainly coast towns. The use of the telephone has hitherto been almost entirely confined to the military service, mainly in connexion with the coast defences. This military telephone service was developed a good deal during the war in the Dardanelles military area and that of Smyrna.

# ITINERARIES

## RAILWAYS

### SUMMARY

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### ROUTE I

**OTTOMAN (SMYRNA—AIDIN) RAILWAY, 471·120 km;**  
(292 $\frac{3}{4}$  miles)

This is a double line to Paradisos (junction for Buja; km. 6·435), then single line; normal gauge; maximum gradient at least 16 in 1,000 between Keklik (km. 283·140) and Hamidie (km. 302·550), where the line rises on to the plateau. In November 1914 the rolling-stock consisted of 50 locomotives (32 with tender), 35 tenders, 123 passenger carriages, 34 vans, 452 goods wagons, and 748 trucks.

Only the main bridges are noted in the itinerary given below. They are nearly all of plate girders resting on stone piers. All the bridges between Smyrna and Ayasoluk are of this type.

kilometres  
0·000

**Smyrna Station**, alt. 2 m., station buildings on the r.; main lines in front of station buildings, prolonged to the N. on to the mole. From these lines several other lines go off l. and enter a shed



kilometres

at the edge of the sea. On the other side of the station there are station buildings, sheds, and repairing shops, on the l. an engine-shed traversed by a loop-line with double entry.

The line crosses the **Meles** by a bridge of 2 spans 40-50 ft. each. Immediately beyond the bridge there is a triangular connexion with the Smyrna-Kassaba line, at the level crossing on the latter.

2.100

**Caravan Bridge Station**, alt. 11 m.

6.435

**Paradisos Junction**, alt. 61 m.; siding for 35 carriages.

Branch line to **Buja**, 3.620 km.

Between Paradisos and Kazamir the line again crosses the Meles by a bridge similar to that mentioned under km. 0 above.

14.080

**Kazamir Junction**, alt. 138 m.; loop-line for 55 carriages; sidings for 113 carriages.

Branch line to **Sevdi Kõi**, 1.600 km.

22.125

**Jimovasy Station**, alt. 101 m.; loop-line for 47 carriages; siding for 18 carriages; water-tank.

28.160

**Develi Kõi Station**, alt. 69 m.; loop-line for 48 carriages; siding for 30 carriages.

The line crosses the **Takhtaly Chai** by a bridge of 2 spans, 70 ft. over all.

36.210

**Kayas Station**, alt. 52 m.; loop-line for 56 carriages; siding for 5 carriages; water-tank.

43.040

**Trianda Station**, alt. 50 m.; loop-line for 38 carriages; siding for 10 carriages; water-tank.

48.280

**Torbaly Junction**, alt. 43 m.; loop-line for 63 carriages; sidings for 196 carriages.

Branch line to **Ödemish**, 61.950 km. From this line at **Chatal Junction** a subsidiary branch diverges S. to **Tire**. Torbaly-Chatal Junction, 36.610 km.; Chatal Junction-Tire, 11.260 km.

55.920

**Jellat Station**, alt. 16 m.; loop-line for 60 carriages; siding for 16 carriages; water-tank.

kilometres

65-980

**Koz Bunar Station**, alt. 19 m.; loop-line for 30 carriages; siding for 44 carriages.

Between Koz Bunar and Ayasoluk the line crosses the **Küchük Mendere** by a bridge of 4 or 5 spans, about 200 ft. over all.

77-240

**Ayasoluk Station** (Ephesus), alt. 19 m.; loop-line for 58 carriages; sidings for 216 carriages; water-tank.

Between Ayasoluk and Azizie there are 2 high viaducts, each of 3 or 4 spans of 60 ft. each and 2 tunnels 200 yds. and 1,100 yds. long respectively, the second close to Azizie station.

86-090

**Azzie Station**, alt. 234 m.; loop-line for 59 carriages; sidings for 180 carriages; water-tank.

About half-way between Azizie and Balachyk there are three high bridges placed close together within 1 mile. The middle bridge is a brick arch of about 60 ft. span; the remainder have stone piers and plate girders.

99-375

**Balachyk Junction**, alt. 61 m.; loop-line for 35 carriages; sidings for 699 carriages; water-tank.

Branch line to **Sokia**, 22-125 km.

Between Balachyk and Seraï Kōi there are a large number of low bridges, in many cases 5 to 10 spans of about 35 ft. each. These have masonry piers and plate girders.

107-825

**Deirmenjik Station**, alt. 65 m.; loop-line for 30 carriages; sidings for 64 carriages.

113-860

**Erbeyli Station**, alt. 50 m.; loop-line for 46 carriages; siding for 27 carriages.

120-295

**Karabunar Station**, alt. 47 m.; loop-line for 50 carriages; sidings for 22 carriages; water tank.

129-950

**Aidin Station**, alt. 65 m.; loop-line for 70 carriages; sidings for 247 carriages; water-tank.

140-410

**Omurlu Station**, alt. 56 m.; loop-line for 47 carriages; siding for 26 carriages.

kilometres

148·860

**Kiosk Station**, alt. 71 m. ; loop-line for 34 carriages ; siding for 28 carriages.

?

**Kyrk Kahve Station** ; sidings for 132 carriages.

154·490

**Chifte Kahve Station**, alt. 60 m. ; loop-line for 42 carriages ; sidings for 28 carriages.

159·320

**Sultan Hissar Station**, alt. 81 m. ; loop-line for 46 carriages ; siding for 18 carriages ; water-tank.

164·550

**Akche Station**, alt. 78 m. ; loop-line for 46 carriages ; sidings for 50 carriages.

175·010

**Nazly Station**, alt. 85 m. ; loop-line for 96 carriages ; sidings for 200 carriages ; water-tank.

187·080

**Kuyujak Station**, alt. 92 m. ; loop-line for 63 carriages ; sidings for 74 carriages ; water-tank.

198·345

**Khorsumlu Station**, alt. 110 m. ; loop-line for 70 carriages ; siding for 28 carriages ; water-tank.

212·425

**Burkhanie Station**, alt. 135 m. ; loop-line for 52 carriages ; siding for 28 carriages.

**Maeander Siding** ; siding for 8 carriages.

North-west of Seraī Kōi the line crosses the **Maeander** by an important bridge, 3 spans of 80 ft. each with smaller openings.

230·530

**Seraī Kōi Station**, alt. 169 m. ; loop-line for 60 carriages ; sidings for 138 carriages.

240·590

**Shamly Station**, alt. 166 m. ; loop-line for 39 carriages ; siding for 16 carriages.

251·050

**Gonjarly Junction**, alt. 306 m. ; loop-line for 60 carriages ; sidings for 85 carriages ; water-tank.

Branch line to **Denizli**, 9·255 km.

258·695

**Botzeli Station**, alt. 275 m. ; loop-line for 39 carriages ; sidings for 70 carriages ; water-tank.

The line crosses the **Chürük Su** by a high bridge of 3 spans of about 60 ft. resting on piers about 60 ft. high.

273·480

**Koja Bash Station**, alt. 437 m. ; loop-line for 28 carriages ; siding for 16 carriages.

kilometres

- 283.140     **Keklik Station**, alt. 541 m. ; loop-line for 42 carriages ; siding for 190 carriages ; water-tank.
- 302.550     **Hamidie Station**, alt. 866 m. ; loop-line for 150 carriages ; siding for 36 carriages ; water-tank.
- 307.910     **Chardak Station**, alt. 851 m. ; loop-line for 38 carriages ; siding for 40 carriages.
- 327.895     **Appa Station**, alt. 871 m. ; loop-line for 38 carriages ; sidings for 44 carriages ; water-tank.
- 343.585     **Evjiler Station**, alt. 891 m. ; loop-line for 38 carriages ; siding for 32 carriages.
- 356.460     **Sütlej Junction**, alt. 855 m. ; loop-line for 32 carriages ; siding for 30 carriages ; water-tank.  
Branch line to **Chivril**, 30.575 km.
- 376.575     **Dineir Station**, alt. 866 m. ; loop-line for 58 carriages ; sidings for 212 carriages ; water-tank.
- 391.060     **Kara Kuyu Station**, alt. 1,016 m. ; loop-line for 40 carriages ; sidings for 71 carriages.
- 398.705     **Chapaly Station**, alt. 1,015 m. ; loop-line for 40 carriages ; sidings for 92 carriages ; water-tank.
- 412.385     **Kechiborlu Station**, alt. 1,010 m. ; loop-line for 36 carriages ; sidings for 65 carriages.
- 424.050     **Baladyz Station**, alt. 933 m. ; loop-line for 66 carriages ; sidings for 104 carriages ; water-tank.
- 446.580     **Kule Önü Station**, alt. 930 m. ; loop-line for 36 carriages ; sidings for 93 carriages ; water-tank.
- 471.120     **Egerdir Station**, alt. 953 m. ; loop-line for 22 carriages ; sidings for 200 carriages : water-tank.

## ROUTE II

SMYRNA—KASSABA AND EXTENSION RAILWAY,  
421.9 km. (262½ miles)

The line is double from Smyrna to Khalka Bunar, where the branch line to Burnabad goes off; single from that point onwards. The gauge is normal (1.45 m.) and the minimum radius of curves 300 m. The maximum gradient is 1 in 40, in the section Alashehir-Afiun Kara Hissar. Duration of journey (stops included): Smyrna-Alashehir, 5 hrs. 30 min.; Alashehir-Ushak, 5 hrs. 25 min.; Ushak-Afiun Kara Hissar, 6 hrs. Rolling-stock in 1914: 55 locomotives, 176 passenger carriages, 1,050 vans and trucks. The Smyrna passenger station is in the town; another at Khalka Bunar, near the sea, for goods. The repairing shops are at the goods station, which is in connexion with a mole where ships can load and unload.

kilometres  
0.00

**Smyrna Station**, alt. 6.80 to 8.80 m. Platform buildings facing the street; platform along the buildings giving access to the lines, which run in at right angles to dead ends. On the r., 2 passenger platforms, each flanked by 2 tracks; intermediary track between the two central tracks. All these tracks end under a roof which projects beyond the platform next the platform buildings. A sixth track at right angles to the platform, outside the roof, also comes to a dead end at the platform. On the l., 2 sidings, connected up by means of 2 turntables. The second siding enters a shed abutting on the platform next the platform buildings. A third branches to r. from the first of these sidings. Beyond, on the l. are 4 sheds entered by sidings branching from the main lines. The

kilometres

two on the far side are large. They are separated from the two on the near side by a block of private houses and are situated on the other side of a level crossing over 4 lines. To r., facing these two large sheds, is another small one. Opposite is a metal bridge, skew, 2 spans of 8·10 m. carrying 3 lines. There is a water-tank of 135 cub. m. (steam-pump).

1·05

Level crossing on the Ottoman line. The two lines have triangular connexion.

1·930–2·493

**Khalka Bunar Station**, alt. 2 m.; water-tank of 40 cub. m. (steam-pump); repair-sheds; double-entry siding to l. with 2 lines branching from it to l. to the pier. From the first of these lines branches a third, also going to the pier, from the second a line going to an old engine-shed and terminating there in a dead end. To r. is a set of sidings, of which 4 enter a wagon-shed, and 2 continue beyond the shed as far as the repair-shed, which is also entered by 3 other lines nearer the main lines. A sixth line branches from the last of the set of sidings to r. and runs to the coal-bank. From this sixth line another with a turn-table branches to r. running to a wood-store, while another side line from it branches out in 6 lines giving access to the locomotive shed and the building shop. Between the latter and the main lines are several buildings including workshop, store-house, and station-master's house.

2·493

Steel bridge of 7·62 m.

2·5

**Khalka Bunar stopping-place**, alt. 2 m. The double line continues for some distance and then one line goes off r. to **Burnabad Station** 5·230 km. from Khalka Bunar, alt. 31·6 m.; length of sidings at Burnabad 220 m.

kilometres

2.6-2.7	Steel bridge of 9.14 m., carrying double line.
3.1-3.2	Steel bridge of 6.09 m.
4.1-4.2	" "
4.7-4.8	<b>Abattoir stopping-place</b> , alt. 2 m.
4.9-5	Steel bridge of 6.09 m.
5.2-5.3	" "
5.6-5.7	Steel bridge, 2 spans of 9.13 m.
6.1-6.2	<b>Bayrady stopping-place</b> , alt. 1.86 m. After the stopping-place, a small cutting 1.5 km. long, maximum depth 3.15 m.
7.5-7.8	<b>Triada stopping-place</b> , alt. 1.84 m.; siding 210 m. long.
8.2-8.6	Cutting, maximum depth 5 m.
9.1-9.2	<b>Petrola stopping-place</b> , alt. 1.72 m.
10.2-10.3	<b>Alai Bey stopping-place</b> , alt. 3.50 m.
11.0-11.1	<b>Kordelio Station</b> , alt. 5 m.; sidings 524 m. long.
	After Kordelio, the line goes in a wide bend round the outliers of the mountain ridge, and enters the marshy tract of the Gediz Chai. The plain grows grain in summer, and is largely inundated in winter.
12	<b>Papa Scala Station</b> , alt. 4 m.; sidings 117 m. long.
13.4-13.5	<b>Thomaso Station</b> , alt. 5 m., sidings 135 m. long.
14.9-15	Steel bridge of 9.14 m.
15.7-15.8	" "
17	<b>Chighili Station</b> , alt. 7.5 m.; sidings 492 m. long.
17.3-17.4	Steel bridge, 2 spans of 9.13 m.
21.5-21.6	" "
22.1-22.2	Steel bridges of 3.5 m. "
24.4-24.5	<b>Ulujak Station</b> , alt. 6 m.; sidings 215 m. long.
30.3-30.4	Steel bridge, skew, 5 spans of 8.32 m.

kilometres

31.4–31.5	Double-track steel bridge, skew, of 2.13 m. at the entrance to Menemen station.
31.5–31.8	<b>Menemen Station</b> , alt. 20 m. ; sidings 593 m. long ; water-tank of 40 cub. m. (steam-pump). Line draws nearer Gediz Chai and runs between prettily wooded hills.
31.8–31.9	Double-track steel bridge of 9.13 m.
38.3–38.5	<b>Emir Alem Station</b> , alt. 22.6 m. ; sidings 178 m. long. Line enters the pass between Dumanly Dagħ to l. and Yamanlar Dagħ to r. The chaussée lies on the l. between the line and the river.
39.2–39.3	Steel bridge of 9.13 m.
39.4–39.5	Steel bridge, 3 spans of 9.13 m.
39.6–39.7	Steel bridge of 9.13 m.
42.2–42.4	Cutting 400 m. long, max. depth 4.6 m.
42.5–42.9	Cutting 250 m. long, max. depth 6.25 m.
43.0–43.1	Steel bridge of 9.13 m.
45.7–45.8	„ „
46.7–46.8	Steel bridge, 2 spans of 9.13 m.
49.6–49.7	„ „ „
51.6–51.7	„ „ „
55.9–56.0	<b>Muradie Station</b> , alt. 33.5 m. ; sidings 383 m. long. Line now traverses fertile plain.
56.4–56.5	Steel bridge of 9.13 m.
58.0–58.1	Steel bridge, skew, of 8.50 m.
59.4–59.5	Steel bridge, skew, 3 spans of 9.13 m.
61.3–61.4	Steel bridge, skew, 2 spans of 9.13 m.
63.0–63.1	<b>Khoros Kōi Station</b> , alt. 47.8 m. ; sidings 220 m. long. Village 4½ m. distant, a place of pilgrimage for the Greeks.
65.0–65.1	Steel bridge of 9.13 m.
65.4–65.5	„ „
66.0–66.4	<b>Manisa (Magnesia) Station</b> , alt. 50 m. ; sidings



kilometres

	660 m. long; water-tank of 80 cub. m. (steam-pump).
67.3-67.4	Branch line to <b>Panderma</b> (Route III) goes off l.
69.3-69.4	Steel bridge of 9.13 m.
70.5-70.6	" "
75.4-75.5	" "
75.9-76	Steel bridge, skew, of 7.20 m.
76.6-76.7	" " 8.40 m.
	<b>Choban Isa Station</b> , alt. 40.8 m.; sidings 570 m. long.
83.1-83.2	Steel bridge, 3 spans of 15.16 m.
89.9	" " 9.13 m.
90.2-90.3	Steel bridge of 9.13 m.
90.6-90.7	" "
91.4-91.5	" "
91.7-91.8	" "
92.1-92.2	" "
93.0-93.1	<b>Kassaba Station</b> , alt. 68.65 m.; sidings 335 m. long; water-tank of 40 cub. m. (steam-pump).
94.5-94.6	Steel bridge of 4 m.
94.6-94.7	" " 5 m.
94.7-94.8	Steel bridge, skew, of 4 m.
96.5-96.6	Steel bridge of 2 m.
98.5-98.6	" "
98.7-98.8	" "
100.4-100.5	Steel bridge, skew, 2 spans of 8.10 m.
100.5-100.6	Steel bridge, 2 spans of 6.10 m.
105	<b>Urghanly Station</b> , alt. 71.25 m.; sidings 135 m. long.
107.4-107.5	Steel bridge of 6 m.
111.8-111.9	" " 4 m.
113.6	<b>Akhmedli Station</b> , alt. 85.70 m.; sidings 290 m. long.
	On the l., over the river, a number of tumuli (Bin Tepe). Hills on r. are broken into sharp peaks.

kilometres	
113.9-114	Steel bridge, 2 spans of 9.10 m.
114.9-115	Steel bridge of 5 m.
115.2-115.3	„ „ 3 m.
115.5-115.6	„ „ „
123.2-123.3	Steel bridge, 2 spans of 6.10 m., over the bed of the <b>Sart Chai</b> .
123.6	<b>Sart</b> (Sardis) <b>Station</b> , alt. 102 m.; sidings 110 m. long.
124.4-124.5	Steel bridge, skew, of 4.35 m.
125.6-125.7	Steel bridge, 3 spans of 6.10 m.
129.3-129.4	Steel bridge of 3.03 m.
129.4-129.5	Steel bridge, 2 spans of 6.10 m.
130.2-130.3	Steel bridge of 8.158 m.
130.6-130.7	Steel bridge, 2 spans of 9.20 m.
131.5	<b>Salykhly Station</b> , alt. 109.30 m.; sidings 407 m. long; water-tank of 40 cub. m. (gravitation).
133.6	Steel bridge of 1.80 m.
134.6-134.7	„ „ 5.10 m.
134.7-134.8	„ „ 8.158 m.
134.8-134.9	Steel bridge, skew, 2 spans of 6.29 m.
135.7-135.8	Steel bridge of 6.10 m.
136.1-136.2	„ „ 4.45 m.
138.6-138.7	Steel bridge, 2 spans of 6.10 m.
138.9-139	Steel bridge of 3 m.
142.6-142.7	Steel bridge, skew, 2 spans of 6 m.
142.9	<b>Monamak Station</b> , alt. 131.60 m.; sidings 85 m. long. To NE. stretches the region of extinct volcanoes, craters, lava, and hot springs called in ancient times Katakekaumene ('Burnt Land').
147.5-147.6	Steel bridge of 4.40 m.
148.1-148.2	„ „ 9 m.
152.2-152.3	Steel bridge, 3 spans of 6 m.
153.1-153.2	<b>Dere Kōi Station</b> , alt. 145 m.; sidings 230 m. long.

kilometres	
157.8-157.9	Steel bridge of 3 m.
159.9-160.0	Steel bridge, 2 spans of 4.57 m. and 2 spans of 6.10 m.
160.3-160.4	<b>Alkhan Station</b> , alt. 159.50 m.; sidings 145 m. long.
160.8-160.9	Steel bridge, 2 spans of 6.10 m.
167.3-167.4	„ 3 „ „
167.9-168.0	Steel bridge of 4 m.
169	<b>Alashehir Station</b> , alt. 190 m.; sidings 415 m. long; water-tank of 40 cub. m. (gravitation). Inn at station.
172.8-172.9	Steel bridge of 5 m.
172.9-173.0	Steel bridge, 2 spans of 5 m.
175.9-176.0	Steel bridge, 3 spans of 15.162 m. over the <b>Alashehir Chai</b> .
176.6-176.7	Steel bridge of 15.162 m.
176.8-176.9	„ „
177.0-177.1	Steel bridge, 2 spans of 15.162 m.
177.2-177.3	Steel bridge of 15.162 m.
177.6-177.7	„ „ 6 m.
177.9	<b>Kinlik Station</b> , alt. 159 m.; sidings 403 m. long.
179.5-179.6	Steel bridge of 9.606 m. over the <b>Kara Kuyu Deresi</b> . The line enters the mountain region. Series of cuttings and embankments of no great length. Beginning of the steep gradients (25 in 1,000).
185.5-185.6	Tunnel No. 1 of 119 m.
187.5-187.6	<b>Konaklar Station</b> ; sidings 340 m. long; water-tank of 40 cub. m. (gravitation).
189.0-189.2	Viaduct No. 1, 160 m., 3 spans, the central being 100 m. and the other two 30 m.; height of track above bottom of ravine 38 m.
189.2-189.3	Tunnel No. 2, 103 m.
189.5-189.6	Tunnel No. 3, 86.15 m.
190.2-190.3	Tunnel No. 4, 128.15 m.

kilometres

191.7-191.8	Steel bridge of 6 m.
191.8-192.1	Tunnel No. 5, 266.84 m.
192.1-192.2	Arched bridge of 6 m. over the <b>Kajy Dere</b> .
192.3-192.5	Tunnel No. 6, 163.37 m.
192.9-193.3	Tunnel No. 7, 360.68 m.
193.5-193.7	Tunnel No. 8, 134.10 m.
194.1-194.4	Tunnel No. 9, 155.95 m.
195.0-195.3	Tunnel No. 10, 234.80 m.
196.1-196.3	Tunnel No. 11, 125.52 m.
197.2-197.3	Tunnel No. 12, 78 m.
198.8-199.1	Tunnel No. 13, 260 m.
199.1-199.4	Viaduct No. 2, 6 spans of 30 m. ; height of track above bottom of ravine 103 m.
202.1-202.4	Tunnel No. 14, 265 m.
203.0-203.4	Tunnel No. 15, 315 m.
204.1-204.7	Tunnel No. 16, 530 m.
205.1-205.2	Viaduct No. 3, 3 spans of 30 m. ; height of track above bottom of ravine 27 m.
205.3-205.5	Tunnel No. 17, 152 m.
205.7-205.8	Tunnel No. 18, 95 m.
206.1-206.2	Tunnel No. 19, 65 m.
206.8-207.2	Tunnel No. 20, 243 m.
207.5	<b>Günei Köi Station</b> , alt. 819.50 ; sidings 402 m. long ; water-tank of 80 cub. m. (gravitation). The line crosses a plateau furrowed by many shallow watercourses, which do not require bridges ; ordinary culverts for drainage.
217.5-217.9	<b>Elvanlar Station</b> , alt. 823.36 m. ; sidings 403 m. long. Maximum downward gradients on stretch to the <b>Takmak Dere</b> 16 in 1,000. Arched bridge of 5 m. over the <b>Elvanlar Dere</b> . Steel bridge, 2 spans of 12.934 m. over the <b>Takmak Dere</b> . Maximum upward gradients 15 in 1,000, then maximum downward gradients of about 17
219	
223.1-223.2	

kilometres	
	in 1,000 as far as bridge at km. 241.5. Numerous shallow ravines.
235.3-235.4	<b>Akhmedler Station</b> , alt. 718.40 m. ; sidings 303 m. long.
241	Water-tank of 80 cub. m. (gravitation).
241.5-241.6	Steel bridge, 2 spans of 12.934 m. Maximum upward gradients of 25 in 1,000 to Inei station.
247.9-248.0	Steel bridge, 2 spans of 6 m.
249.6	Arched bridge of 8 m. over the <b>Inei Su</b> .
252.0-252.5	<b>Inei Station</b> , alt. 755.15 m. ; sidings 403 m. long. Maximum upward and downward gradients of 17 in 1,000 as far as Kara Kuyu station.
257.5-257.6	Arched bridge of 8 m.
271.4-271.6	<b>Kara Kuyu Station</b> , alt. 913.05 m. ; sidings 402 m. long.
278.0-278.1	Steel bridge, 3 spans of 6 m. Fairly level plateau as far as Ushak.
285.3-287.0	<b>Ushak Station</b> , alt. 907.90 m. ; sidings 542 m. long ; water-tank of 80 cub. m. (steam-pump). Inn at station.
288.4-288.5	Steel bridge of 15.162 m.
295.5-295.6	„ 9.606 m.
297.8-297.9	„ 12.934 m. Maximum upward gradients of 17 in 1,000 to km. 319.
302.2-302.6	<b>Kapaklar Station</b> , alt. 975.70 m. ; sidings 402 m. long.
326.8-327.2	<b>Banaz Station</b> , alt. 914.20 m. ; sidings 403 m. long ; water-tank of 40 cub. m. (pulsometer).
328.6-328.7	Steel bridge, 2 spans of 15.162 m.
344.1-344.2	Steel bridge of 15.162 m. over the <b>Kalashtlar Chai</b> .
344.6-344.7	Steel bridge of 15.162 m. over the <b>Kordiran Chai</b> .

kilometres

344.9-345.4	<b>Oturak Station</b> , alt. 1,038 m. ; sidings 403 m. long.
	Steep gradients from Oturak to km. 355 (maximum 25 in 1,000).
349.8-349.9	Tunnel No. 21, 18 m., and a covered gallery of 42 m.
352.6-352.9	Tunnel No. 22, 205 m., and a covered gallery of 55 m.
353.3-353.4	Tunnel No. 23, 60 m.
355	Highest point on the line. Alt. 1,251 m. Watershed between Aegean and Black Sea areas. Line enters the valley of the Porsuk Chai. Downward gradients of 17 in 1,000 after this point, and then gentler gradients to km. 376.
357.0-357.1	Steel bridge of 9.606 m.
357.5-358	<b>Tolumbunar (Tunlu Bunar) Station</b> , alt. 1,222.10 m. ; sidings 403 m. long.
364.3-364.4	Steel bridge of 12.934 m.
371.0-371.1	„ 5 m.
371.9-372.3	<b>Küchtük Köi Station</b> , alt. 1,151.90 m. ; sidings 402 m. long ; water-tank of 80 cub. m. (steam-pump)
373.4-373.5	Steel bridge of 5 m.
374.6-374.7	Steel bridge of 15.162 m. over the <b>Porsuk Chai</b> .
375.1-375.2	Steel bridge of 15.162 m. over the Porsuk Chai.
	Upward and downward gradients of 16 in 1,000 between km. 376 and 381, then more gentle.
395.6-395.9	<b>Bal Mahmud Station</b> , alt. 1,061.30 m. ; sidings 402 m. long.
404.0-404.1	Steel bridge of 12.934 m. over the <b>Dolai Chai</b> .
404.4-404.5	„ 20.40 m. „ „
405.4-405.5	Steel bridge, 2 spans of 4 m.
406.1-406.6	<b>Göjek Hammam Station</b> , alt. 1,029.88 m. ; sidings 325 m. long.

kilometres	
407.3—407.4	Steel bridge of 15.162 m. over the Dolai Chai.
419.8—420.3	<b>Afiun Kara Hissar Station</b> , alt. 1,007.28 m. ; sidings 584 m. long ; water-tank of 40 cub. m. (steam-pump).
421.9	Junction with the Anatolian railway (Route V) at Afiun Kara Hissar station, on the Eskishehir— Konia section.

### ROUTE III

BRANCH LINE: MANISA—PANDERMA, 275 km.  
(171 miles)

This is a single line of normal gauge (1.45 m.) which leaves the Smyrna—Kassaba line at Manisa. Between Manisa and Soma the minimum radius of curves is 300 m. and the maximum gradients are 8.77 in 1,000. Distances: Manisa—Soma, 92 km.; Soma—Panderma, 183 km. Times (stops included): Manisa—Soma, 3 hrs. 26 min.; Soma—Panderma, 7 hrs. 45 min.

kilometres	
0.00	<b>Manisa Station</b> , alt. 50 m.
0.5	Steel bridge of 3.05 m.
0.9-1	„ 6.10 m.
2.3-2.4	„ 4.57 m.
2.8-2.9	„ 2.29 m.
3.5-3.6	„ 6.10 m.
3.8-4	Steel bridge, 4 spans of 18.24 m.
4.4-1	Steel bridge of 4.57 m.
6.002	Steel bridge, skew, of 2.29 m.
6.8-7	„ 6 spans of 13.24 m.
8.1-8.2	Steel bridge of 9.14 m.
10.8-11.2	<b>Karaghachly Station</b> , alt. 35.40 m. ; sidings 380 m. long.
17.9-18.2	<b>Sarkhanly Station</b> , alt. 42.60 m. ; sidings 420 m. long.

kilometres	
23.3-23.7	<b>Mikhaïli Station</b> , alt. 56.54 m. ; sidings 56.54 m. (?) long ; water-tank of 20 cub. m. (hand-pump).
36.6-37	<b>Kayshlar Station</b> , alt. 82 m. ; sidings 460 m. long.
41-41.4	<b>Kapakly Station</b> , alt. 89.17 m. ; sidings 420 m. long.
44.2-44.6	<b>Chiftlik Station</b> , alt. 85 m. ; sidings 185 m. long.
50.8-51.2	<b>Ak Hissar Station</b> , alt. 100 m. ; sidings 380 m. long ; water-tank of 80 cub. m. (steam-pump).
57.6	Steel bridge of 6.10 m.
58.8-59.2	<b>Suleimanly Dagh Station</b> , alt. 106.25 m. ; sidings 430 m. long.
69.7-69.9	<b>Kharta Station</b> , alt. 237 m. ; sidings 310 m. long ; water-tank of 20 cub. m. (hand-pump).
79.2-79.3	Steel bridge of 3.05 m.
79.9-80	„ 6.15 m.
80.1-80.5	<b>Kyrkaghach Station</b> , alt. 166 m. ; sidings 410 m. long.
84.6-84.7	Steel bridge of 4.57 m.
86.5-86.9	<b>Boghaz Kahve Station</b> , alt. 136.31 m.
88-88.1	Steel bridge of 4.57 m.
92-92.4	<b>Soma Station</b> , alt. 135 m. ; sidings 320 m. long ; water-tank of 60 cub. m. (steam-pump). The station is N. of the town and river. The line turns W. and climbs the N. slope of the valley.
107	<b>Beyje Station.</b>
113-114	Sharp curves, where the line crosses a ravine.
120	<b>Kerasun Station.</b> The town is a little to the E., at 273 m. elevation.
123	Steep gradients at crossing of watershed, the line rising to 434 m.
127	<b>Karajalar crossing-station.</b>
128-129	Viaduct, 4 spans of 30 m. and 1 span of 10 m.
129-130	Viaduct, 6 spans of 30 m.
131-133	Two tunnels of 410 m. and 136 m.



kilometres

- 134 The line becomes more level, and descends into the valley of the **Uzunja Dere**.
- 142 **Soghujak Station.**  
The line passes up the valley of an affluent of the Uzunja Dere and rises on to plateau.
- 144 Tunnel of 140 m.
- 147 Sharp curves begin. Two tunnels of 200 m. and 65 m., then a viaduct of 5 spans of 30 m.
- 158 **Chukur Hussein Station.**  
Bridge of 2 spans of 20 m. The line descends towards the plain of Balikesr.
- 175 **Balikesr Station**, alt. 173 m. The line follows the Panderma road.
- 182 **Crossing-station.** Gradients, the line rising to 300 m., then descending.
- 197 **Yeniköi Station.**  
The line crosses a low ridge between two valleys. Two tunnels of 250 m. and 300 m.
- 207 **Omer Köi Station.**  
Tunnel of 115 m., then a bridge of 15 m. over the **Hatab Deres**, an affluent of the Susurlu Chai.
- 220 **Susurlu Station**, alt. 84 m., on the Susurlu Chai.  
The line runs parallel to the valley for 8 km., and then turns off towards Lake Manyas.
- 235 **Okju Göl (Okjular) Station.**  
Bridge of 60 m. over the **Karadere**.
- 248 **Aksakal Station.**
- 263 **Syghyrjyk Station.**
- 272 **Crossing-station (Panderma).**  
Tunnel of 250 m. before Panderma station.
- 275 **Panderma Station** E. of the town, beside the harbour.

## ROUTE IV

**MUDANIA—BRUSSA RAILWAY, 41·280 km. (25½ miles)**

This is a narrow-gauge (1·10 m.) line worked by the *Compagnie Ottomane du Chemin de Fer de Mudania-Brousse*. Winding a great deal to avoid the making of bridges and tunnels, it crosses a country rich in wine, olives, mulberries, and corn.

kilometres

0-000	<b>Mudania Station</b> 300 m. from the landing-stage ; water-tank. The line crosses the road, and rises in two great loops to the summit ; maximum gradient 25 in 1,000.
10-550	<b>Yorgoh (Ghörgeli) Station</b> , alt. 217 m. The line descends to the plain of Brussa in loops ; maximum gradient 15 in 1,000. Banking from km. 21 to km. 24.
21-900	Steel bridge of 6 spans over the <b>Ülfer (Nilufer) Chai</b> ; length 67·40 m.
22-600	<b>Koru Station</b> ; water-tank. Upward gradient of 20 in 1,000 (?) between km. 29 and km. 31·500. Upward gradient of 15 in 1,000 between km. 31·500 and km. 33.
34-900	Steel bridge of 7 spans over the <b>Ülfer Chai</b> ; length 82·74 m.
36-190	<b>Ajemler Station</b> , for Chekirje (hot baths).
38-815	<b>Brussa stopping-place</b> . Upward gradient of 20 in 1,000 (?) between km. 39·800 and km. 40·800.
41-280	<b>Brussa Station</b> below the town ; water-tank.

## ROUTE V

ANATOLIAN RAILWAY: HAIDAR PASHA—AFTUN  
KARA HISSAR SECTION, 474.6 km. (295 miles)

This is a normal-gauge (1.45 m.) single line, the first 25 km. of which (to Pendik) were about to be doubled when the war broke out. Just before the war, work had been begun on a strengthening of the permanent way to enable it to carry express trains—substituting 37-kilo rails for the existing 30-kilo rails, and possibly putting in 3 sleepers for 2. Minimum radius of curves 300 m. Maximum gradient 25 in 1,000 in the section Bilejik-Eskishehir. In this section 2 engines are required to draw a train of 320 tons.

kilometres

0.00

**Haidar Pasha Station**, alt. 4 m., a new station, on the model of large German railway stations, situated close to the pier; covered platform and side tracks (loops); water-tank.

The line goes close to the coast, through a cultivated and thickly inhabited plain narrowing towards Pendik, with a view r. to the Princes' Islands, the Sea of Marmara, and, beyond it, to the Mysian Olympus.

2.6

**Kyzyl Toprak Station**, alt. 15 m.

3.3

Branch line goes off r. to **Fener Baghche** 1.8 km. distant on the coast.

5

**Göz Tepe Station**, alt. 46.35 m.

6.2

**Eren Köi Station**, alt. 36.60 m.

The line closes on the coast of the Gulf of Izmid, which it now follows almost uniformly.

9.1

**Bostanjyk Station**, alt. 4.90 m.; water-tank. Small harbour with stone pier.

14

**Maltepe Station**, alt. 7.90 m. Bridge over the **Drakas Dere**.

kilometres

The line goes somewhat inland, reaching the sea again at Kartal.

20      **Kartal Station**, alt. 10 m. Landing-stage for steamboats.

24.5      **Pendik Station**, alt. 6.10 m.; water-tank; landing-stage for steamboats.

27      Bridge over the **Büyük Dere**.

The line keeps close to the sea for 2 km., and then the coast-line bends sharply SW. and then E. to form a rough triangle, the line keeping along the base of the triangle.

34.9      **Tuzla Station**, alt. 19.80 m. The village of Tuzla lies 2 km. S., on the coast.

44.2      **Gebze Station** S. of the town, alt. 72.30 m.; water-tank. Steel viaduct over ancient Libyssonos, 247 m. long; seven piers (the middle one is 15 m. high).

The line now rejoins the coast on the Gulf of Izmid, and runs close to the shore as far as Izmid, often through cuttings.

55.3      **Dil Iskelesi Station**, alt. 3 m. Just beyond the station is the steep rock promontory of Kaba Burnu.

59.4      **Tavshanjyl Station**, alt. 6.10 m.

63.8      **Hereke Station**, alt. 3 m.; water-tank.

73.8      **Yarymja Station**, alt. 3 m.

80.0      **Tütün Chiftlik Station**, alt. 7.90 m., at the foot of Chin Dag (alt. 640m.); on the r., the peninsula of Zeitun Burnu.

The line goes through a cutting and along the foot of the mountain.

83.9      **Derinje Station**, alt. 7 m.; water-tank. Storage sheds and port, to which rails run.

Derinje has been converted by the railway into a regular port, whose importance is bound to increase with the extension of the railway. It is

kilometres

a more suitable place for, e.g., mobilization purposes than Izmid, which it now rivals in importance. Troops on detraining find themselves close to the ships. The buildings at Derinje can accommodate 10,000 men. Water good and plentiful—fountains on the quay.

91

**Izmid Station**, alt. 1·85 m. ; water-tank ; rails to harbour.

The line leaves the Gulf of Izmid and strikes inland along the N. side of a low marshy plain, which divides the gulf from the freshwater lake of Sabanja. Numerous iron bridges and culverts of span varying from 2 to 10 m. The span is often too small in flood-time.

109·6

**Büyük Devrent Station**, alt. 36·65 m.

The line now goes along the S. shore of Lake Sabanja, on embankments.

123·5

**Sabanja Station**, alt. 36·65 m. ; water-tank. The lake is oval-shaped, 16 km. long by 5 km. broad and reaching a depth of 53 m.

131·5

**Arifle Station**, alt. 35·39 m. ; water-tank.

Branch line goes off l. to **Adabazar** 9 km. distant.

The line turns S. and enters the valley of the **Sakaria**.

139·0

Steel bridge over the **Sakaria** ; lattice girders above level of rails ; 2 stone piers ; length 100 m.

Enter gorge of **Balaban** 13 km. long. Tunnel of 66 m.

151·0

Bridge over the **Sakaria**. Same details as last.

156·0

**Geive Station**, alt. 69·25 m. ; water-tank.

Valley now widens. South of the station the imperial road to Angora goes off l., crossing the river by an old stone bridge, one arch of which has fallen in and has been repaired by a wooden structure.

kilometres	
	The line enters the fertile plain of Ak Hissar and turns W. along the N. side of the plain.
167.6	<b>Ak Hissar Station</b> , alt. 78 m. Direction now SW. and then S.
181.3	<b>Mekeje Station</b> , alt. 84.20 m.; water-tank. Valley contracts, and the line winds by steep gradients along the bank.
	Steel bridge (? 2 steel bridges) over the Sakaria ; lattice girders above level of line ; 1 stone pier ; total length 140 m.
195.4	<b>Lefke Station</b> , alt. 101.25 m. The village is 2 km. W. of the station. Line enters another gorge, going SE.
205.0	Line leaves Sakaria valley and turns S. up defile of the <b>Kara Su</b> . Wide curve on embankment. Numerous bridges large and small. Line crosses the river before reaching Vezir Khan station.
214.1	<b>Vezir Khan Station</b> , alt. 146.40 m.; water-tank. Line enters a narrow gorge, between precipitous rocks 100 m. high. Many cuttings. Eleven steel bridges of from 20 to 30 m. Tunnel of 66 m.
231.9	<b>Bilejik Station</b> , alt. 291.25 m.; water-tank. Good road to Bilejik town 5 km. NW. Inn at station. Line enters a gorge 4,438 m. long.
235.570	Steel viaduct and curve of <b>Pekdemir</b> on the Sorghun Su, 7 spans ; 6 stone piers, average height 17 m.; length 180 m. Curve on embankment. Tunnel of 50 m.
238.108	Steel viaduct of <b>Bash Kōi</b> between 2 tunnels ; steel arch of 72 m. span ; 4 steel piers, with stone foundations ; height above bottom of ravine 37 m.; total length 137 m.
238.454	Tunnel of 100 m.
240.422	Steel viaduct of <b>Yaila</b> ; lattice girders below

kilometres

- level of line ; 2 steel lattice piers and 2 vaulted arches ; height above ravine 60 m. ; length 120 m. Nine tunnels of 70–411 m.
- 248·7      **Kara Kõi Station**, alt. 621·60 m. ; water-tank.  
Line is now on the plateau, still along the Kara Su valley, and then SE. into the Bozöyük valley.
- 263·3      **Bozöyük Station**, alt. 733·50 m.  
Line rises to 855 m.
- 280·1      **Inönü Station**. alt. 828·68 m. ; water-tank.  
The village lies 3 km. S. under the slope of the Tutluja Tepe.  
Line descends the valley of the **Sarı Su**.
- 294·4      **Çukur Hissar**, alt. 804·90.
- 313·4      **Eskishehir Station**, alt. 785 m. ; water-tank ; repair-shops and roofed shed for cereals. Many loop-lines. Junction of line to Angora. The station covers a considerable extent of ground, which is unfortunately marshy and unhealthy. There is an engine-shed for 24 locomotives entered by rails crossing a turn-table of 15·5 m. diameter.  
Line ascends the Porsuk Chai valley.
- 320·4      Single span steel bridge 30 m. long over the **Porsuk Chai**.
- 334·4      Similar bridge over the river.
- 336·8      **Kuche Kisik Station**, alt. 820·75 m.
- 340·8      Bridge over the Porsuk Chai.  
Line leaves the river and turns abruptly round to enter the **Ak Kaya** defile. In this defile there are within a sector of 4 km. 8 steel bridges of 18 m. span and 4 of 10 m. span, 3 tunnels of 36 m., 50 m., and 60 m. respectively, and numerous minor works of span varying from 0·60 m. to 5·00 m. The original construction work was badly done and required constant mending. Some of the larger bridges may have been rebuilt.
- 356·8      Line enters the plain of Sabunju Bunar.

kilometres

- 358.6      **Sabunjy Bunar Station**, alt. 943.65 m.; water-tank.  
 Line rises to a col, alt. 1,020 m.; siding at the summit. Then a rapid descent for 9 km. with gradients of 10 to 19 in 1000.
- 380.3      **Alayund Station**, alt. 926.65 m.; water-tank.  
 Branch line to **Kutahia** 10 km. distant. This branch crosses the Porsuk Chai by a solid bridge of 30 m. with 2 spans of 15 m. Kutahia station, alt. 923.85 m.; water-tank.  
 Line now follows the valley of **Beli Kavak**.
- 396.3      Enter the Chekürler defile; cuttings and bankings to divert the water.  
 Steel bridge of 10 m. span over a watercourse generally blocked by rubble carried down by the stream.
- 399.9      **Chekürler Station**, alt. 1,016.85 m.; water-tank; large shed for storing grain.
- 404      Line enters the defile of **Aghalar** 3 km. long. In the defile there are 7 semicircular bridges of 5 m., a tunnel of 50 m., and a series of less important works.  
 Leaving the defile the line crosses a plain.
- 426.5      **Düver Station**, alt. 1,113.25 m.; shed for grain.  
 Line crosses a marsh, which is apt to flood and cut the line in rainy weather. It then rises to the highest point on the line, alt. 1,115 m., beyond which it descends rapidly over a plain where the ground is liable to settle.
- 441.3      **İkhsanie Station**, alt. 1,083.35 m.; shed.  
 Line enters the plain of **Ak Ören** and passes the siding of Hammam constructed for the sulphur springs close at hand.
- 458.4      **Kazly Göl Hammam Station**, alt. 1,030 m.; water-tank.  
 Line enters the wide marshy plain of **Afiun**



kilometres

Kara Hissar and crossing a solidly built steel bridge of 30 m. with 3 spans of 10 m. reaches the station of Afiun Kara Hissar.

474.6

**Afiun Kara Hissar Station**, alt. 997.55 m. ; water-tank ; shed, 80 m. by 12 m., with a platform ; engine-shed for 8 locomotives, entered by rails crossing a turn-table of 13.50 m. diameter ; repair-shop ; coal-dépôt and coaling platform. Junction with the Smyrna-Kassaba line (Route II). The station is 200 m. from the town, with which it is connected by a well-kept chaussée 12 m. wide.

# ROADS AND TRACKS

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## INTRODUCTION

FOR convenience' sake it has been thought advisable to treat the lines of road communication in five sections separated from each other by railway lines. Thus Routes 1-50 are included in Section I, which is bounded on the north and west by the sea and on the east by the Smyrna-Soma-Panderma railway; Routes 51-120 fall within the second section, which is separated from the first by the line last mentioned, and is bounded on the north by the sea, on the south by the railway between Manisa and Afium Kara Hissar, and on the east by the Anatolian railway from Izmid to Afium Kara Hissar; the third section takes in the block west of the line Smyrna-Torbaly-Sokia; the fourth is the area up which run the great routes from the west into the interior, and is bounded on the north by the Smyrna-Kassaba-Afium Kara Hissar line, and on the west and south by the Ottoman railway; while the remainder, lying south of the Maeander valley, constitutes the fifth section.

Any arrangement of the routes within the various sections presents considerable difficulties, and is bound to be more or less arbitrary. It has been found most convenient to number the routes according as they appear to follow one another most naturally in radiating from the boundary lines or from the various road-centres. The general direction in the succession of the route numbers is from west to east. This is, however, liable to modifications according to local circumstances, and it has not been attempted to secure a symmetrical and regular arrangement at the expense of that which seemed to be imposed either by the special conditions of individual cases or by the nature of the materials from which the routes have been compiled. The scheme also entails treating the various sections in separate belts or areas, which are dealt with from north to south. Thus Section I falls roughly into three



belts: (1) north of the Edremid-Balikesr chaussée; (2) between the latter and the line Dikeli-Bergama-Ak Hissar; and (3) the remainder. The first of these belts includes Routes 1-30, the second Routes 31-41, and the third Routes 41-50. Similar belts and groups of routes may be traced in the other sections.

The varied character of the authorities from which the itineraries have been constructed has in a good many cases made it preferable to divide what is really one route into two or more, and this is especially the case where the authorities for such a route describe the various sections of it in opposite directions. It has also necessitated, in certain cases, making separate routes of very short stretches of road, as e.g. in Section I along the seaboard between Aivalyk and Smyrna.

### SECTION I

It has already been pointed out (see p. 17) that the longer valleys of the Troad drain either north-west or north-east. This implies that the main natural routes from the coast in this area come from these directions. There are in fact no good natural roads crossing the peninsula from north to south or from west to east.

The chief starting-point of roads in the Troad is Chanak Kalesi. From here a road fit for wheeled traffic in dry weather runs along the coast via Lapsaki to Kemer, whence one track branches south-east to Bigha, the other continuing east to Karabigha (see Route 1). Routes of which there is little information run inland from Chanak to Bigha (Route 2), Büyük Tepe Köi (Route 3), and Bairamich (Route 4). The first of these is fit for wheels throughout to Bigha, and the second used to be passable for wheels, though it was found to be impracticable in 1911. The third is passable by country carts, and forms an alternative to the longer but easier carriage-road from Chanak to Bairamich which goes by Ezine (see Route 5).

Very little is known regarding routes between the Mendere

Chai valley and the west and south coasts of the Troad. The natural outlet for the Ezine district is towards the west rather than down the river, which below Ezine enters a gorge, and the importance of Alexandreia Troas in ancient times points to regular communication between the west coast and the Scamander valley. At present there is a road from Geyikli to Ezine which was fit for motors in 1915 (see Route 7). There is also a road from Dalian to Ezine, apparently fit for carts, besides a fairly frequented horse-track (see Route 8). Between the Menderez Chai valley and the south coast the large village of Aivajyk in the upper valley of the Tuzla Chai appears to be the chief meeting-point of roads. The road from Behram through Aivajyk to Ezine (Route 10) seems to be passable for wheels throughout, but between the coast and Aivajyk the going is poor. Another track to Aivajyk leads from Chipne. This road is poor, but is in common use, and is said to be open all winter. Farther east there is a horse-track over the western spurs of Mt. Ida from Narly to Bairamich, and Mt. Ida itself, with the chain of summits to east of it, is quite passable for pack-transport from the Edremid district to the north-west and north (see Routes 12, 13, and 14).

The Menderez Chai valley is connected with the Sea of Marmara by two main lines of communication. One of these leads from Karabigha up the Bigha Chai valley and over the low watershed separating the latter from the Scamander basin (see Route 15). The other follows the general course of the Gönen Chai into the upland basin of Avunia, and thence over the Haji Öldüren Dag (see Route 19, introduction and itinerary from mile 26, and Route 20). These two lines are themselves connected by horse-tracks, of which, however, there is very little information. A few details of two of them are given in Routes 14 and 16, and there is probably a fairly easy track from the district of Chan Bazar or Büyük Tepe Köi, leading over the easy col which separates the upper waters of the Gülle Chai from those of the Gönen Chai.

From the mouth of the Gönen Chai to Panderma there are only two natural doorways to the interior, at Edinjik and

Panderma. Here the coastal range dips lowest (see p. 17). The main high road from the sea towards the south is the chaussée which leads from Panderma along the eastern side of the Manyas Göl and over the watershed to Balikesr. The first part of this route is detailed in Route 23 and the second (in the reverse direction) in Route 29. (For the communications of Panderma with the east and south-east see Section II.) The western side of the Manyas Göl is also practicable, though more difficult. It is crossed by a number of tracks leading southwards. None of these are metalled, but they should all be practicable for cart traffic in dry weather. One of them is described in Route 19. Another is given in Route 21, a cart-track from Edinjik to Manyas which crosses Route 19, and a continuation of it which links the Manyas district with that of Balikesr is described in Route 22. Other tracks traversing the same area are referred to in Route 24, miles 47½ and 63, and the description of Balikesr (see *Gazetteer of Towns*, p. 549). They are little used for heavy traffic, but may be taken by wagons returning empty. They cross the fairly easy track detailed in Route 24 (Panderma-Ivrindi), which leaves the chaussée from Panderma (Route 23) on the east side of the Manyas Göl. This route gives access to the lead-bearing district of Balia Maden, and forms a cross-line of communication between the two main roads to Balikesr, the chaussées from Panderma and Edremid respectively. Of the latter, that from Edremid has in the past had some commercial importance, as the ore from the mines at Balia Maden used to be carried along it from the light railway joining the chaussée and the mines. Instead of being shipped from Akchai, the port of Edremid, this traffic may in the future go to Panderma if the proposed branch line is run from the mines to the Soma-Panderma railway.

Tracks connecting the mines with the Edremid-Balikesr chaussée on the one hand and with the country west of the mines on the other are given in Route 24, under mile 63, in Route 25, under mile 20½, and in Routes 26, 27, and 28. Generally speaking, the district round Balia Maden is badly

off for communications. The chaussée referred to in Route 25, mile 20½, appears to be bad and little used, and none of the other routes which converge on the district are fit for wheeled traffic except with difficulty.

No special mention need be made of what may be called the roads along the seaboard from Edremid to Smyrna. A number of these have been described or outlined in Routes 30, 31, 35, 42, 43, 44, and 45. All of them, except, possibly Route 42, are fit for wheeled traffic in dry weather even where they are not metalled. Between the stretch of coast just mentioned and the Soma-Panderma railway the chief road-centre has always been Bergama, the main connexions of which, as already pointed out, are with the north (see pp. 11-12). Route 36 gives an outline of the road from Bergama to Kemer, and cross-tracks from the coast to the upland plain of Kosak which this road taps are described in Routes 32 and 33. Another cross-track from the same route to the Edremid-Balikesr chaussée (Route 25) is described in the continuation of Route 33 from Yokary Beyköi to Ivrendi (Route 34), which joins a direct road from Bergama to Ivrendi (Route 37). Route 38 gives the chaussée between Bergama and Soma, while Route 39 links Soma with Balikesr. Route 40 indicates a cross-line of communication between the last-named road and the direct route from Bergama already mentioned (see Route 37).

Of the roads just referred to connecting Bergama with the north, the only one which is metalled is Route 38, which with its continuation to Balikesr (Route 39) provides the easiest natural line of advance from Bergama to the Marmara region (see also p. 23). The hill country which the others traverse is, however, not difficult, and most of the tracks might be passable for wheels in dry weather.

On the other hand communication southwards from Bergama is rather more difficult. The hill system on the south side of the Bakyr Chai valley is not indeed high or specially complicated (see p. 24). The country, however, is extraordinarily barren, and the surface is strewn with

boulders, which make travelling very difficult. Routes 47 and 48 give fairly direct tracks across this sterile region. Traffic for the south, however, tends to follow the longer but easier roads to west or east. The line in the former case is that of the Smyrna chaussée (outlined in Route 44). In the second the line Bergama-Soma-Ak Hissar-Manisa may be followed (for the sections of which see Routes 38, 41, and 46), or shorter but unmetalled roads may be taken over the passes south of Kinik. One of the latter is described in Route 49.

Route 50 is an unmetalled track crossing the inhospitable Yünd Dag region from the Gediz Chai plain in the east to the sea at Chandarly in the west. This road seems to have had considerable importance in early times, and traces of metalling are still visible.

## SECTION II

The first group of roads east of the Soma-Panderma railway is that which connects the towns of Panderma, Mikhalij, Kirmasti, Susurlu, and Brussa (see Routes 51, 52, 53, 54, 55, and 56). All these routes lie over plain or low hills, and, though only Routes 51 and 55 are chaussées, they are all practicable for vehicles in dry weather. A second group of communications may be taken to include those of the region north and east of Brussa. In this group Routes 62 and 64 give the connexions from Brussa to Mudania and Gemlik respectively. There is no recent information as to the quality of these roads, but both should be fit for wheeled traffic. Route 63 (Gemlik-Mikhalij) appears to have little importance. It is unmetalled, and is given simply for the details it contains about the country which it traverses. On the other hand Route 65 (Brussa-Iznik) is an important road, on which there is unfortunately no recent information. It should present no difficulty except in the crossing of the coastal range between Yenishehir and Iznik. Routes 66 and 67 (Iznik-Gemlik, via the south and north shores of the Iznik Göl respectively) should also be passable for wheels in dry weather. Route 68

(Iznik-Hersek) is detailed from an old account, and there is no evidence to show what the road is like at present. The roads from Iznik to Bilejik and from Izmid to Iznik (Routes 69 and 70) are probably fairly easy, but here again there is no recent information. Route 71 (Izmid-Sabanja) is quite easy except in wet weather.

Supplies are generally plentiful throughout the country traversed by the routes mentioned in the preceding paragraph. With the exception of water, they are much less abundant in the broken, largely wooded hill country to the south. Here of course travelling is very much more difficult. Very few of the roads in this mountain region are metalled, and many of them are difficult even for pack-transport. Routes 57, 58, 59, 60, 61, 72, 73, 74, 75, 76, and 77 give tracks connecting Kirmasti, Beyje, Brussa, Susurlu, Kepsut, Balikesir, Bigadich, Balat, and Bali. Of these roads the easiest natural line of communication from north to south is Route 72, which ascends the Susurlu Chai valley to Bigadich. Its continuation up the valley is given in Route 80 (Bigadich-Simav). Routes 81 and 82 give alternative lines of communication between Balat and Simav, while Routes 78 and 79 indicate lines of connexion from Bali and Balat to Emed.

The place last mentioned lies on the road detailed as Route 83 (Simav-Tavshanly), which provides a cross-line of communication between the upper Makestos valley (see Routes 72 and 80) and the main pack-road between Brussa and Kutahia (see Route 85). Route 84 gives a cross-line between the latter and the road from Bali to Brussa referred to above (see Route 77), which it joins at Harmanjyk. The chaussée from Brussa to Kutahia is described in Route 86, while Routes 87, 88, 89, and 90 give the carriage-roads linking Inegöl, Inönü, Kutahia, and Eskishehir.

Nearly all the rest of the routes to be dealt with in the present section (i. e. Routes 91-120) either cross the watershed between the Mysian hill country and the country to west and south, or else lie altogether on upland plateau.

The most westerly line of communication over the water-

shed is detailed in Routes 91 and 92, which give a cross-line between the middle Makestos valley and the upper valley of the Bakyr Chai. Where it crosses the hills this road is unmetalled, and probably passable for wheels only with difficulty. East of it rises the continuous chain known in ancient times as Mt. Temnos, which forms a barrier to easy communication between north and south. Route 97, which is now probably a chaussée throughout, crosses the eastern end of the barrier, and the difficult pack-road detailed in Route 98 goes round it, each providing a cross-line between the upper Makestos and the valley of the Gediz Chai. A third cross-line is given in the last part of Route 114, which joins Simav and Gediz and was reported in 1906 to be a good chaussée. The position of the place last mentioned gives it some importance as a centre of communication (see also p. 45).

Of the roads which do not cross the watershed the greater number are very similar in character. They form a network linking the small market towns in the upland region, and the chief difficulties in communication are caused by the deep canyons which the rivers cut in the plateau. These roads include Routes 93, 100, 101, 102, 104, 105, 106, 107, 108, 109, 110, 116, 118, 119, and 120. None of the roads detailed in the itineraries of these routes are metalled except Route 104, part of Route 116, and Routes 118 and 120. Routes 94, 95, 96, and 103, which lie in the easy plains or valleys west or south of the transition plateau, of course come under a different category from those which cross the high land. So also do Routes 111, 112, and 113, the first stages of which traverse the difficult Murad Dagh region, and Routes 114 and 115, which cross the mountain behind Kutahia. In the case of the two last-mentioned groups of roads it should be added that the districts in question are served by chaussées of which no detailed itineraries are available. These are referred to in the introduction to Route 111 (Gediz-Ushak) and in that to Route 115 (Kutahia-Emed).

## SECTION III

In the area covered by Routes 121–135 inclusive, i. e. the district west of the railway from Smyrna to Sokia, a fair amount of road construction and improvement was carried out during the war, mainly to facilitate the military defences. The main route is the Smyrna–Cheshme chaussée (Route 121), which is fit for motor traffic to Vurla and for ordinary wheeled traffic beyond that place to Cheshme. A cross-road between this route at Kilisman and the south coast at Sivri Hissar was repaired during the war and is now fit for wheeled traffic. This road crosses a pack-route from Sevdi Kõi over the hills to Vurla (see Route 122).

With regard to the peninsula of Karaburun the first part of the road from Cheshme to Denizgereni (Route 123) is fit for wheels, and a branch from it to Cape Keretses was used for wheeled traffic during the war. This branch left Route 123 near Lytri. The rest of Route 123 is fit only for pack-transport, and the same is true of Route 124 (Denizgereni–Akhyrly) and the first part of Route 125 (Akhyrly–Gülbaghche). The greater part of the latter route was made fit for wheels during the war in connexion with the defences at Cape Artes.

Of the remaining routes which fall under this section, i. e. Routes 126–135, two are fit for wheels for the first few miles and passable only for pack-transport for the rest of the journey. These are Route 132 (Ayasoluk–Sokia) and Route 134 (Plaka–Domatia), which cross the Samsun Dag and Gümüş Dag respectively. Of the others Route 126 (Gülbaghche–Sivri Hissar) is partly metalled and is probably a wheel-road in dry weather, and Route 130 (Ayasoluk–Scalanova) is a chaussée throughout. None of the other routes detailed appear to be metalled, but all are probably practicable for wheeled traffic under normal conditions.

Besides the routes described in this volume there are wheel-roads traversing the plain south of Smyrna and one from Ayasoluk to Sokia. Part of the latter is described in



Route 147. The road from Sokia to Scalanova (referred to in the introduction to Route 133) appears to be metalled and in any case is fit for wheels.

#### SECTION IV

The routes in this section are roughly of three kinds : (1) those which follow the valleys of the Kayster and Maeander, (2) lateral routes over the mountain systems north and south of the Kayster valley, and (3) plateau routes.

1. Many of the roads which come under (1) are unmetalled, but all are fit for wheels, the chief difficulties being occasioned by mud in wet weather. Of these roads Routes 143, 144, 146, and 154 taken together compose what may be called the Kayster valley route, while Routes 147, 150, 157, 166, and 167 constitute sections of the great road up the Maeander valley. Routes 137, 138, and 139, though they do not follow the river valleys, may be regarded as falling under (1) as they provide alternatives to the first stage of the Hermos valley route detailed in Section II. The road detailed in the itinerary of Route 139 (Manisa-Burnabad) is a horse-track, but there is also a chaussée between the places in question.

2. The lateral routes which come under (2) are nearly all similar in character, unmetalled and, with a few exceptions, used only for pack-traffic. They include Routes 136, 140-142, 145, 148, 149, 151-153, 155, 156, 158, and 159-161. Of these Route 141 and the first part of Route 152 are fit for carts, and Route 160 (Alashehir-Seraï Kōi), which is largely metalled, is probably fit for wheels throughout. The last-named route is perhaps the chief cross-line of communication within the western area of the present section. It crosses the neck where the main mountain systems abut upon the plateau.

3. The plateau routes include Routes 162-165 and Routes 168-174. Most of these are unmetalled, the chief exception being Route 174 (Dineir-Afiun Kara Hissar), which is a chaussée at least from Dineir to Sandykly. Besides this road there appears to be at least one other chaussée, of which few

details are available. This is the road from Demirji to Denizli referred to in the introduction to Route 165. Even the unmetalled roads, however, are in most cases passable for wheels, though sometimes with difficulty. The remarks already made on the plateau routes of Section II (see p. 168) apply here also. To the difficulties there mentioned, which are caused by the crossings of the river valleys and canyons, must be added, in the case of the most westerly routes, that of making the ascent from the valley depressions followed by the main roads from the west on to the plateau.

### SECTION V

There are few good roads in the Karian district. The most important is the chaussée from Aïdin up the China Chai valley to Mughla (Route 178). The extension of this road to Giova and Mermeris is given in Routes 187 and 188. According to the most recent information available the latter are little used for wheeled traffic. The only other chaussées in this region are the road from Kuluk through Milas to Mughla, of which the Milas-Mughla stage is detailed in Route 185, that from Nazly to Bozdoghan (see first part of Route 192), and the main road from Yerengüme to Denizli (see introduction to Route 196). All the others are unmetalled but vary considerably in quality and in the amount of supplies available according to the nature of the country traversed. The most trying are the tracks which serve the south-western corner. Here the natural difficulties of the terrain are increased by lack of water in summer. Travellers have to rely on what may be found in the cisterns which have been built at long intervals throughout this region. These cisterns are large buildings visible from a great distance. The roof consists of a whitewashed dome resting on a base wall a few feet high, which encloses a round stone-built basin. A low narrow door leads into the interior, which is dimly lighted through a few holes in the masonry, and a narrow ledge runs round the edge of the basin above the water-level.

A few steps lead down to the water, the level of which naturally varies according to the time of year. The water itself in late summer is often foul, as the supply depends on surface drainage and is used for watering cattle. It should always be filtered.

Of the routes east of the Dalaman Chai valley, which compose the last group to be dealt with in this volume, only one appears to be metalled, Route 215 (Buldur-Dineir). The hill country here is not difficult, however, and most of the roads are probably passable for carts. Where river valleys are followed travelling may in spring be difficult owing to marshes caused by the overflowing of the rivers (see, e.g., introductions to Routes 202 and 205). Route 203, down the Dalaman Chai valley itself, is of course only a horse-track, and the same is true of the greater part of Route 207 (Sügüt-Yüksekkum). Except Buldur there are no large towns in this area, and little agricultural produce is grown beyond what is required for local needs. Much of the country, however, is capable of great development, and at present limited supplies are obtainable nearly everywhere.

## ROUTE 1

### CHANAK—KARABIGHA, 69½ miles

This road is unmetalled and in dry weather is fit for any wheeled traffic but might become almost impassable after heavy rains. It was reported in 1915 to be in good order as far as Chardak (mile 25) with stone bridges where necessary, including a good stone bridge over the Bergaz Chai (mile 13). After Chardak the road becomes more difficult.

In normal times agricultural supplies of all kinds are plentiful. There is abundance of pine timber on the mountains.

miles

- |     |   |
|-----|---|
| 0   | <b>Chanak.</b> Road (very bad in May 1911) runs NE. over undulating ground.   |
| 3   | <b>Karaja Ören</b> village.   |
| 5½  | Enter an undulating plain; many valonias, planes, and other trees, with great fields of barley.   |
| 6   | <b>Halil Pasha Chiftlik</b> (? to r.).  |
| 7½  | Cross the <b>Mussa Kõi Chai</b> 5 to 6 ft. wide and 2 to 3 ft. deep in May.   |
| 8   | Cross the <b>Yapuldak Chai</b> by a ford. Kahve and spring; plane-trees.<br>Road (bad in 1911) ascends a low hill and improves on the descent.                                      |
| 11½ | <b>Bergaz</b> village to r. on a hill-side (see Route 2, mile 13). Road runs here across plain; fewer trees.  |
| 13  | Large stone bridge in good order over the <b>Bergaz Chai</b> . The road now runs close to the coast past 2 Muhajir villages and crossing small streams at intervals of about 1 mile |
| 21½ | <b>Lapsaki</b> , small town among olive groves and vine-  |

miles

yards; 800 houses, of which 200 are Christian; total pop. about 3,000. The place is the headquarters of a kaza. Behind the town rise wooded hills.

- 25     **Chardak** in an almost level plain; large khan used in 1911 as barracks. There is a landlocked harbour here with depths of 30–40 ft. but shallow in many places. The heights in the neighbourhood were fortified during the war.

Road now becomes more difficult. It runs at first direct through the coastal plain and then over gently sloping spurs.

- 28½     Tower of an abandoned lighthouse at the end of a half-isolated spur. Road crosses small level alluvial plain and over a small river. It then goes uphill and a little inland not far from a farm-house just inside a 'remarkable bluff' (see Adm. Chart); a good deal of cultivation but no villages. Road gets worse, crossing several valleys between hill-spurs, which now become more pronounced.

- 34½     Cross the **Gyüre Dere**. Ground here level and overgrown with small trees.

- 36     **Asarjyk**, small prominent peak with steep tower-like rocks towards the sea.

Road gets still worse. At one point it was found necessary in 1911 to drive through the water at a point where a fairly steep cliff comes close down to the water.

Road then cuts across the neck of **Boz Burun**.

- 37     **Gyüreje Scala**. Road turns SE. up a valley; good going here.

- 40½     Gyüreje village to r. Road turns NE. for some distance; the hills are covered with scrub, planes, oaks, and pines.

- 41½     Road now very bad, first S. and then more SE. over a watershed and down into the flat upper valley

miles

of the **Kemer Chai**. It then turns E. and NNE., with fair going.

45 The hills come down close to the river, and the road crosses by a ford, and descends on the r. bank. The valley soon opens out again to the Kemer Ovasy.

47½ A track, barely passable for wheels in 1911 but capable of being improved without much labour, branches SE. here to Bigha (see Route 2, mile 50).

**Kemer** ½ hr. to l., a short distance from the coast beneath a high cliff, near where the Chanakly Boghaz stream runs into the sea. Preliminary work for a large harbour was begun at Kemer in 1914, but it is not known if it has been continued.

Road runs inland in an easterly direction, rising slowly.

51 Fountain. Gradient now steeper leading up to a broad saddle. The slopes are featureless, covered with scrub and a few pines.

Road winds round to l. passing **Bürçek, Chakarly, and Örtüje**. The last-mentioned is a village of Muhajirs from Philippopolis. About ½ mile beyond it is a tepid spring with the remains of old baths.

69½ **Karabigha**, the port of Bigha; exports of corn, sheep, and cattle to Constantinople. The population numbers about 2,000, including some Christians and Jews. The place is the head-quarters of a nahie.

## ROUTE 2

### CHANAK—PANDERMA, 96 miles

This is a carriage-road at least as far as Bigha (mile 54) and partly macadamized. The only difficult stage on this section should be from Erdagh (mile 17) to Akhmedler (mile 31). Beyond Bigha as far as Edinjik (mile 88½) the route is unmetalled. An alternative track between Bigha and Musacha,

unmetalled but easy going in dry weather, runs via Dimetoka and along the low ground near the shore. There are many streams, without bridges, to be crossed, but all are fordable except in winter.

Supplies are probably fairly plentiful except between Erdagh and Ahmedler, and there is plenty of water.

miles

- |                  |  |
|------------------|--|
| 0                | <b>Chanak.</b> For about 3 miles the route coincides with Route 1.   |
| 3                | <b>Karaja Ören.</b> About here apparently the present route leaves that by Lapsaki.  |
| 9                | <b>Yapuldak</b> village in a well-cultivated district. From here onwards a ridge about 300 ft. high shuts off the view of the sea.   |
| 13               | <b>Bergaz</b> village; head-quarters of a nahie; pop. 2,500, mainly Moslem. There is plenty of water, and much fruit is grown.<br>Track continues over high ridges and through deep valleys. |
| 17               | <b>Erdagh</b> village about $\frac{1}{2}$ mile to l.   |
| 26               | <b>Baljylar</b> village lying fairly high on the hills; a small stream runs to the coast.  |
| 28 $\frac{1}{2}$ | Cross the bed of the <b>Ichi Chai</b> (dry in October) to Ichi village.<br>During the next 10 or 12 miles the stream is apparently crossed several times.                                    |
| 31               | <b>Akhmedler</b> on the Ichi Chai.   |
| 33               | <b>Eshelek</b> on the r. bank of the stream.   |
| 36               | The valley now becomes flatter.  |
| 41               | <b>Bakajak</b> village.  |
| 44 $\frac{1}{2}$ | <b>Saryjak</b> village. Track continues through the plain. The stream now is apparently called the Kara Atly Chai.   |
| 48               | <b>Istengil.</b>   |
| 50               | <b>Doghanjy Kõi</b> 1 mile to l. The T. L. from Chanak Kalesi and Lapsaki joins the present route, and a road comes in on the l. from Kemer (see Route 1, mile 47 $\frac{1}{2}$ ).           |

miles

54 **Bigha**, chief town of the north-eastern Troad ; pop. about 10,000. There seems to be a large Bulgarian (Pomak) element both in the town and its neighbourhood. The place was formerly the head of a sanjak. It is now the seat of a kaimmakam.

The road now runs through gently undulating country.

55 Road rises on to a broad hill.

56½ **Idiris Gorusu** village. Descent to the **Karaboghaz Chai**.

57¾ Road crosses the stream. The latter runs in a general NW. direction past the large village of **Dime-toka** to join the **Bigha Chai** 6-7 miles from the sea.

59¾ **Kataltepe**, Muhajir village. Some villages to l. in the plain, through which several streams flow NE. to the sea.

61¾ **Demirji** village ¾ mile to r. on a stream.

63¾ **Sinekji**, Muhajir village.

64 Pass the head of a stream on l. ; **Girleengech** village on its l. bank about 1 mile distant.

About here the T. L. to **Gönen** diverges to r. It winds through the hills to **Sary Köi**, a Rumelian village of about 1,000 inhabitants, situated about 10 miles ESE. of the point here reached on a tributary of the **Gönen Chai**. **Sary Köi** is the site of the ancient **Zelesia**. From there the T. L. skirts the W. side of the **Gönen Chai** valley for another 6½ miles to **Gönen**.

66½ **Gyobemalan**, Turkish village. Road bends NNE. towards the sea for some distance, skirting rising ground on the r.

67¾ Cross a stream formed by several brooks from the hills on the r. Road bends round to E.

69½ Cross the **Kyk Chai**, which comes down a valley on the r. and enters the sea about ¾ mile to NE. of the road.



miles

- 71 **Chifte** village  $\frac{3}{4}$  mile to r. on rising ground.
- 72 Stream from the hills on r. running into a lagoon on the l.
- 72 $\frac{1}{2}$  Pass the SE. end of the lagoon just referred to.
- 74 Stream from the **Gönen Chai**, which enters the S. end of a lagoon immediately on l.
- 74 $\frac{1}{2}$  Cross a bridge, the **Kunalar Iskelesi**, over the **Gönen Chai**. The river comes with a winding course from a valley on the r.
- Ridge on r. running E. by N.
- 76 $\frac{3}{4}$  **Musacha** village. Road now skirts the coast, crossing a good many small streams.
- 79 $\frac{1}{4}$  **Chaushköi**, alt. about 300 ft.
- 83 $\frac{1}{2}$  **Sazly Dere Köi**, large chiftlik near the coast on a stream; few trees.
- Khydrköi**, Muhajir village about 1 $\frac{1}{4}$  mile distant on the E. side of the stream.
- 88 $\frac{1}{2}$  **Edinjik**, large village in a saddle of the coast hills, which here are beautifully wooded. The place has a mixed population of Turks, Tatars, Armenians, and Greeks, chiefly engaged in olive cultivation.
- 90 $\frac{1}{2}$  Cross a stream which runs to the **Manyas Göl**.
- 92 $\frac{1}{2}$  **Maimun Köi** to l. Road follows the r. bank of a small stream.
- 96 **Panderma**.

## ROUTE 3

CHANAK—BÜYÜK TEPE KÖI, 35 miles

This route runs up the fertile valley of the **Koja Chai**, a perennial stream which is crossed 21 times before **Terjiler** (mile 13) is reached. This stage is very fair for wheeled traffic, the road having been put into good repair by the company operating the **Kremaste** gold mine just above **Terjiler** village. From **Terjiler** to **Büyük Tepe Köi** there is

merely an indifferent cart-track, entirely unmetalled. It was found impracticable for carriages in 1911 but had been passable formerly and may have been improved during the war.

Supplies should be plentiful as far as Terjiler, and moderate quantities are probably obtainable throughout.

miles

- |    |   |
|----|---|
| 0  | <b>Chanak.</b>                                |
| 4  | <b>Seraijyk.</b>                              |
| 10 | <b>Belenköi</b> on a hill to r.               |
| 13 | <b>Terjiler</b> (see also Route 6, mile 28½). |

About here apparently a track branches to r. leading through wooded thinly populated country into the Scamander basin. It runs to **Kushchayr**, a small village with abundant water at the western foot of the Kayaly Dag. From there it leads along the southern slopes of the ridge to **Shabjylar** and then farther E. through undulating country to **Shevikler**. From this village it descends the Shevik Chai and then crosses the gently sloping valley of the Karshak Chai to **Bairamich**.

The present route ascends the **Koja Chai**. Track said to be very indifferent for wheels for the remainder of the route.

- |    |   |
|----|---|
| 16 | <b>Ortaja.</b>  |
| 19 | <b>Kiresli.</b> Cross hilly country to the head-waters of the Bigha Chai. |
| 31 | <b>Küchük</b> (? Küchük Tepe Köi). Descend the <b>Bigha Chai</b> valley.  |
| 35 | <b>Büyük Tepe Köi.</b>  |

## ROUTE 4

## CHANAK—BAIRAMICH

*Via KAJAJY OVA, 29½ miles*

This route is 20 miles shorter than the chaussée by Ezine (see Route 5). The track should present no special difficulties, and in places it is a fair road for wheeled traffic. It is used by Turkish carts and traverses good farming country throughout.

miles	
0	<b>Chanak.</b> Route runs S. along the coastal plain.
5	<b>Kalabakly.</b>
7½	<b>Okjylar.</b> Track continues through rough hill country, crossing the heads of several streams which run to the Deïrmen Dere; some water-driven saw-mills, owned by Greeks, in the valley.
17½	<b>Kajajy Ova</b> in the upper valley of the <b>Deïrmen Dere</b> ; country still hilly. The plateau on the r. can be easily crossed via <b>Ishiklar</b> , <b>Chamlyja</b> , and <b>Akköi</b> to <b>Ezine</b> .
24	<b>Chatalcham.</b> Descend steeply and ford the <b>Kar-shak Chai</b> , a tributary of the <b>Menderez Chai</b> . Some distance on the main river is crossed by a bridge.
29½	<b>Bairamich</b> in a hollow on the l. bank of the river; head-quarters of a nahie. The place looks clean and prosperous; many Greeks among the population, which is said to total about 8,000; 3 or 4 Government stores, besides some private granaries. <b>Bairamich</b> is the chief centre in a good farming district. Stock, forage, and water are plentiful. The district produces a considerable amount of oak timber, and there are large saw-mills.

## ROUTE 5

## CHANAK—BAIRAMICH

*Via Ezine, 48 miles*

This is a metalled road as far as Ezine (mile 31). It was in bad condition in 1911 from Chanak to Erenköi (mile 11½), but appears to have been repaired since and is now used by motor traffic. From Ezine it was a good unmetalled track in 1911 and apparently passable for wheels. This stage may have been improved during the war.

Fortifications and gun-emplacements had been prepared by 1915 between the road and the sea from Chanak to Ezine.

Water is procurable at frequent intervals as far as Ezine. From Ezine to Bairamich the springs may be dry in autumn. Horses, mules, and light carts are plentiful.

miles

- |     |  |
|-----|--|
| 0   | <b>Chanak.</b> Road follows the coast round Sary Sighas Bay; chaussée good near the town, degenerating later and muddy in wet weather. Fertile fields alternate with marshes; bird life abundant.  |
| 3½  | Cross a low ridge past the village of <b>Hamidie</b> and cross the <b>Kefez Su</b> .   |
| 6   | Low hill, the site of the ancient Dardanos; battery of 2 guns here in 1911.  |
| 7   | <b>Ak Tash.</b> There is a small wooden pier at this place, 90 ft. long, 8 ft. wide; depth of water 8 ft. at most. Discharging and embarking can be done only in reasonably calm weather. There is also an abandoned steam flour-mill. Cross a small stream. |
| 8   | Road rises in zigzags to over 1,000 ft.  |
| 11½ | <b>Erenköi</b> on a ridge overlooking the straits; population about 2,500, mainly Greeks. There is shallow but safe anchorage opposite here, a long distance from the shore. Flat-bottomed boats and lighters are used for landing goods.                    |

miles

12 $\frac{3}{4}$ 

To r. is the site of Ophryneion, which commands a view of the whole plain of Troy.

13 $\frac{1}{4}$ 

Road to Kum Kale, 6 $\frac{1}{4}$  miles, branches to W.

Present route descends gradually to the Trojan plain.

15 $\frac{1}{4}$ 

**Halil Eli.** A road to Kum Köi, 3 $\frac{1}{4}$  miles, branches W.

Cross the **Dumbrek** stream (anc. Simois).

17

**Chiplak.** The hill of Hissarlyk with the ruins of Troy a short distance to r.

17 $\frac{1}{4}$ 

Fountain.

Valonia grove on r.

20

**Akche Köi.** Many tracks leave the main road in various directions to neighbouring villages.

Road crosses the **Kemer Su** and ascends to over 500 ft. by well-designed zigzags.

28

Cross the **Menderez Chai** by the **Sarymsak Köprü**, a wooden bridge about 400 ft. long and 16 ft. broad. The bridge is 50–60 ft. above the water and was in bad repair in March 1914. It may have been improved since that date. It is unsuitable for heavy loads, but the river is fordable. The road approaches the bridge round a revetted hill-side.

Follow the l. bank of the river.

30 $\frac{1}{2}$ 

A cart-track branches to l.; fording the Menderez Chai. It runs to **Ak Köi** and thence descending to **Bazar Köi** crosses easy plateau country via **Chamlyja** to **Ishiklar** on Route 6 (mile 17 $\frac{1}{2}$ ).

31

**Ezine**, the centre of a rich farming district and head-quarters of a kaza; 800 houses, including 200 Greek, 100 Jewish, and a few Armenian. Cattle, sheep, fodder, wood, and charcoal are abundant; good water. During the war there were store-houses here for flour, boots, clothing, arms, equipment, &c.

Track follows closely the l. bank of the Menderez

miles	Chai, crossing several small tributary streams and passing through fields and valonia groves.
39	<b>Türkmenli.</b>
43	A track running N. and S. crosses the present route.
44	<b>Aghach Köi.</b>
48	<b>Bairamich.</b>

## ROUTE 6

### KUM KALE—BÜYÜK TEPE KÖİ, 50½ miles

This route is accessible also from Yenishehir, Yeni Köi, and Besika Bay via Chiplak. The roads from Yeni Köi and Besika Bay run via Kalafatly, crossing the Menderez Chai by a bridge. This bridge is of wood, not bolted or screwed, but nailed together. It is said to be 180 ft. long by 16½ ft. wide. The banks of the stream are overgrown with willows and scrub and fall steeply to the water. The current is fairly swift and the depth (in April) 3–5 ft.

As far as Ishiklar (mile 17½) probably carts can pass only with much difficulty. From Ishiklar to Terjiler most of the road is very difficult, if not quite impracticable for wheels. From Terjiler onward it is in regular use.

Supplies are plentiful as far as Yuvashlar (mile 10½), beyond which point they probably decrease. Water from streams appears to be fairly abundant except between Yuvashtar and Ishiklar.

0	<b>Kum Kale.</b> The road is at first a chaussée and runs over the Menderez plain, crossing many water-courses.
5	Steep ascent from the plain.
5½	<b>Chiplak.</b> The track crosses the Chanak-Ezine chaussée and strikes E.
10½	<b>Yuvashlar</b> on plateau country.

miles

17½

**Ishiklar.** Perennial water-supply here from springs, augmented by small streams.

Cross the **Deirmen Dere**. Ascend over high ground forming the water-shed between the Deirmen Dere and the Kojia Chai.

25½

**Serjiler.**

28½

**Terjiler.** For the rest of the journey see Route 3, miles 13–35.

50½

**Büyük Tepe Köi.**

## ROUTE 7

GEYIKLI—EZINE, 8 miles

**Geyikli** is a large village with cafés and shops and a much-decorated mosque, lying 2½ miles SE. of a landing-stage in Yukyeri Bay. The water is bad. The road runs via **Bergaz** (4 miles), a large Turkish village and chief place of a nahie, with a population of about 3,000. No details are available regarding the route except that it was passable for motor traffic in 1915.

## ROUTE 8

EZINE—DALIAN, about 15 miles

There is a direct road, apparently fit for wheels, leading to Lyjia and thence to Dalian. The route here described is said to be a fairly frequented track, but it is fit only for pack-transport. It ascends very gradually, and the going is generally good to **Üsküpchi** (about 3½ miles), a village lying about 500 ft. above Ezine. Near here is a disused mine. The country now is strewn with great granite boulders but is partly cultivated, partly pasture, with an abundance of bird-life. To r. are the serrated ridge of **Ala Dag**h and the lower jagged rock of **Kyz Kalesi**. The track gets rougher as the ridge of **Chigri** is approached. The country becomes more rocky,

but there is still sheep-pasture, and several streams come through the rocks. On the Chigri ridge are ancient ruins. From the summit most of the Hellespont can be seen to N. The ground immediately N. and S. is low and easy.

The track now turns W. by an easy and fairly good path past the small village of Chigri. Not far below the village it enters gently undulating ground planted with valonias, among which rise knolls and towers of granite. The path now becomes a regular lane between hedges, and shows traces of being used for wheeled traffic. Passing a windmill it reaches **Kestambol** (about  $9\frac{1}{2}$  miles), a prosperous-looking village of stone houses. From here it is about 1 hour's ride to the hot springs and baths of **Lyjia** through country still covered with valonias but less broken by outcrops of granite. At Lyjia there is a scanty supply of fresh but not good water brought from a distance in an iron pipe. From here the path leads over the valonia-covered site of the ancient **Alexandreia Troas** to **Dalian** (about 15 miles), which is merely a small and poor village. Beyond it is a small harbour shut off from the open sea, and a smaller outer basin almost silted up. On the W. side is a ruined quay, and at various points from N. to S. by E. are numerous upright columns of granite, probably for mooring boats.

## ROUTE 9

### DALIAN—BEHRAM

This track runs S. at first through continuous valonia woods. Two streams flowing through a plain called **Aktash Ovasy** are crossed. A hill 1 mile to W. called Beshik Tepe is now seen, the wood here being more open, and it remains in view for some time. Farther on another hill, **Küchük Beshik Tepe**, is seen to r. covered with pines. Just beyond the S. end of the hill is a solitary khan near the sea ( $1\frac{1}{2}$  hr. from Dalian) called after the village of Tavakly, which lies



1 hr. inland. Above the khan to E. is the steep peak of Sakar Kaya, which forms the coastal barrier. The N. face of the western ridge is fairly steep and wooded.

Some distance on the path reaches a double spur, about  $\frac{3}{4}$  mile across, which comes down from Sakar Kaya, cutting the coast plain in two. It is covered with pines and thick undergrowth, mainly dwarf holly. The track passes through a gully cut by drainage in the calcareous soil, which stands up in places in little cliffs 10 ft. high. It passes close to the sea and rounding the spur again enters valonia woods. Here a track branches to l. to the village of Kösse Deresi some distance inland. The direct track continues along the coast and soon reaches the stream which comes down from the village. The water is only a few inches deep in May. The path now bends to l. away from the sea over a ridge about 250 ft. high running SW. from Kösse Deresi. This ridge forms the N. watershed of the Tuzla Chai. As the path descends S. the character of the country changes. The valonia woods come to an end, and the hill-sides become bare and down-like, partly cultivated, partly grass with occasional holly. To l. is the conical **Tuzla Tepe**, and in front the flat plain of Tuzla opens out. The track bears to the l., and the salt-works are seen in front. It then continues round the base of a hill cut away into a cliff, and in front is the small village of **Tuzla** (about 5 hrs. from Dalian). The salt is obtained from brine springs which rise out of the ground over a considerable area. One of them rises a few minutes NE. of the village to a height of about 2 ft., and the water is hotter than the hand can bear.

The route continues S. to a fine Turkish bridge over the **Tuzla Chai**, two of the arches of which were broken in 1911. The stream runs in 2 branches and is fordable. The country here looks fertile but is little cultivated. There are great areas of splendid grass and clover, but few flocks and herds are seen. Then follows a fairly long climb to **Kulakly** (about 2 hrs. from Tuzla). The ridge on which the village stands commands an extensive view N. over the whole plain of

Tuzla, and it is even possible to see Mt. Athos right over the low line of Lemnos.

From Kulakly a road which could be made passable for wheels without much difficulty runs down to **Baba Burnu**, where there are a fountain and a small harbour with a rough mole of huge blocks, enough to protect a few small coasting vessels.

The track now runs gently uphill from Kulakly, with numerous descents SE. over rolling downs covered chiefly with ilex scrub and here and there towers and bastions of volcanic rock. There is occasional good pasture in the hollows. The track is fair, and the village of **Bademli** is reached after 2 hours' ride. Some distance on the track forks, a little above the village of **Koyun Önü** (or Koyun Evi). The l.-hand branch runs to Behram via Bergaz. The present route strikes to r. and after a few hundred yards reaches the pass leading to the southern slopes and Sivriji. It leads down through a tree-clad ravine and then winds round the hill to the l.; Sivriji Bay comes in sight, with a low hill to the W. of it, the site of the ancient Palamedeion, rising out of tilled fields above the sea. The descent is fairly steep and stony, and along the coast the track is bad. There is considerable cultivation here of wheat and olives.

At **Sivriji** there are a few houses, 3 kahves, a shop, and a lighthouse. From here the path is very bad at first, along a torrent-bed, and then improving somewhat. The ascent is steep, generally due N. More than half-way up the ridge a small fairly well-watered plateau is crossed. The summit is reached at the village of **Bektash**, which contains some well-built houses. The hills here are fairly flat on the top, and there seems to be a good supply of water. The direction now is E. past the Yürük village of **Gurubasy**, about 1 mile beyond Bektash. The track is very stony and after some distance joins that mentioned above from Kulakly via Bergaz. Then follows a gradual descent into the plain, across which the track continues to **Behram** (about 4 hrs. from Sivriji).

## ROUTE 10

BEHRAM—EZINE, 23½ miles

This route is apparently fit for wheels throughout, though the stage from Behram to Aivajyk (mile 11) is poor. Beyond Aivajyk the going is good.

Supplies should be plentiful. Water ought also to be procurable at frequent intervals. The Baghcheli Su carries some water all the year round, and if any section shows none on the surface good and plentiful water may be found by digging a shallow pit 2-3 ft. deep.

miles

- |     |  |
|-----|--|
| 0   | <b>Behram.</b> The bay is sheltered, but there is no landing-stage; there is a mole (in good order in 1911).                               |
| 6½  | <b>Elias Fakik.</b>  |
| 9   | <b>Ishekli.</b>  |
| 11  | <b>Aivajyk.</b> Beyond this place there is a steep descent to Sapanja.   |
| 14  | <b>Sapanja,</b> Moslem village of 100 houses. Here a bridle-path branches NE. to Bairamich. Present route runs in a general NW. direction. |
| 17½ | <b>Baghcheli</b> village about 1 mile W. of the road on the far side of the Baghcheli stream.  |
| 23½ | <b>Ezine.</b>  |

## ROUTE 11

BEHRAM—EDREMID, 43 miles

As far as Chipne (mile 15) the road is poor. From there to Akchai it is an unmetalled cart-track very bad after rain. From Akchai onward the road is macadamized and very good. The whole of the low lands near the sea are covered with luxuriant olive woods. Water should be plentiful from the streams coming from the Kaz Dagh.

miles	
0	<b>Behram.</b>
15	<b>Chipne.</b> A poor road in common use comes in here from Aivajyk. It is said to be open all winter.
17	<b>Chipne Iskelesi ;</b> roadstead.
21½	<b>Narly Iskelesi ;</b> roadstead.
26	<b>Papasly Iskelesi ;</b> roadstead. Cross the Papasly Chai by a bridge.
28	A hill with the ruins of Antandros comes down close to the shore. The western slope is steep, that on the E. much gentler. The road has to pass along the beach, which is not 25 ft. wide, with steep cliffs 30 ft. high overhanging it. Just beyond, the plain opens out again.
29½	<b>Evjiler Iskelesi ;</b> fairly busy roadstead.
37½	<b>Akchai ;</b> port with a pier; oil-crushing and soap-making factories. Road now metalled and good.
39	Cross the <b>Zeitunly Chai</b> by a bridge of 4 separate spans over 4 branches of the river
43	<b>Edremid.</b>

## ROUTE 12

### NARLY—BAIRAMICH

This is a horse-track which crosses wooded spurs of the Kaz Dagh and runs in 8 hrs. to **Evjiler**, a small Turkish village on a mountain stream (apparently the village spoken of in Route 13). From Evjiler it is 4 hours' ride to Bairamich.

There is no detailed report of the route available.

## ROUTE 13

### EDREMID—BAIRAMICH, ? 35 miles

This is the most direct route between Edremid and Bairamich, leading over Mt. Ida. Leaving **Edremid** it follows the chaussée W. for some distance and then strikes to the r.

through fields and across streams, winding round the lower spurs of the **Pasha Dagħ**, whose upper slopes are covered with pine woods. The wide **Zeitunly Chai** (quite shallow in May) is forded just outside the village of Zeitunly beside some piers of what must formerly have been a very long wooden bridge. The village is large and mostly Greek.

From here the path goes N. straight up a spur and rising rapidly, very rough in places. At the top of the spur there is a fairly level stretch, and here the upper limit of olive cultivation is passed and the pine-belt entered. The trees here are at first small and of younger growth than those higher up. The path now runs about NW., always steep but with a very regular gradient and quite good surface. About  $1\frac{1}{2}$  hour's ride from Zeitunly a fine spring on a level neck is reached. This place commands a splendid view of the plain and gulf of Edremid.

The path continues NW. for some time, always good and with a steady gradient. Then the ridge along which the track runs bends W. and begins to rise rapidly towards the Kaz Dagħ, while the path keeps nearly at a level along the N. side of the ridge above a branch of the Zeitunly Chai from the W.

At a little over  $1\frac{1}{2}$  hr. from the spring on the S. side of the mountain a double barrier of limestone is reached, which runs down to N. at right angles to the path. Through each of the ridges runs a cut (*porta*) apparently artificial. The second lies about 200 yds. beyond the first. The cuttings may have been made in ancient times for military purposes, the limestone barrier being the only natural obstacle to the passage of the mountain. The altitude here is 4,340 ft., and the track for some distance continues W., very rough at times, to the watershed, alt. 4,560 ft.

The path now winds for a time round the N. shoulders of the mountain (large patches of snow in May). At this point it is pretty bad. Then comes a rapid descent of several hundred feet to a track which shows signs of being used by carts. A corner is then rounded, and the track enters a level

valley, probably formerly a lake-bed, in which is a saw-mill, alt. 3,770 ft.

From here the direct route, of which no details are available, runs W. past the hot springs which are called the sources of the Scamander. From there a good araba-road leads down the valley to Bairamich. This road reaches the hill village of **Evjiler** in about 5 miles (3 hrs.) from the springs. From here it continues down the valley, which gradually opens out, the country meanwhile becoming less wooded and hilly. **Bairamich** is reached in about 12 miles from Evjiler. By this road the total distance from Edremid seems to be about 35 miles.

#### ALTERNATIVE TRACK

An alternative track from the saw-mill follows the direct route for some distance and then strikes to the r. The going at first is good, and the path winds down the hill-side to the well-to-do village of **Chyrpylar**. From here it is uncertain how the road runs. There may be a direct path leading down to the Scamander or it may be necessary to continue E. to **Kara Köi**. The land here is well tilled and open. The track then turns W. down the Scamander valley. After some distance the hills close in on both sides (see p. 56), the river flowing mostly along the N. side, where it has eaten out steep banks. The hill-slopes are gentle, and those on the N. are better cultivated than those on the S. After about  $1\frac{1}{2}$  mile the defile becomes more open, and some distance farther the village of Evjiler on the direct road is seen up a side-valley to l. Here the track leaves the river and strikes over a shoulder to the r. The hill is covered with pines and some oaks. The Kurshunlu Tepe is then seen in front, and the track again descends to the river. Here it seems to cross by a wooden bridge beside a mill and continuing downstream crosses a low line of hills to **Bairamich**.

## ROUTE 14

## EDREMID—BÜYÜK TEPE KÖİ

This route seems to be merely a horse-track. After crossing the northern part of the plain of **Edremid** it ascends by a difficult path through deep ravines between boulders and over a pass (alt. 3,215 ft.) in the **Atkayasy**, a bare serrated ridge separated on the W. from the Kaz Dagħ by a deep gorge. The track then descends through narrow rocky stream valleys to the valley in which lies **Chausħ Köi** (see Route 20, mile 19½). From here it ascends N. over the **Karacak Dagħ** into a narrow valley and then over a more difficult second ridge, the **Arabkır Dagħ** (or Suk Dagħ) running parallel to the Karacak Dagħ. On the N. side a broad valley is crossed to **Kara Koja**. From there the general direction is W. to **Büyük Tepe Köi**.

The journey on horseback takes 17-18 hrs.

## ROUTE 15

## KARABIGHA—BAIRAMICH, 60 miles

This road was passable for arabas in 1911. In 1914 the stage to Bigha (mile 13½) was reported to be a good metalled chaussée, but there is no evidence to show whether the rest of the road has been improved.

Supplies are probably scarce beyond Bigha until Bairamich is reached. Water should be plentiful throughout from streams. For the larger part of the route there is no information regarding fuel or timber. Forests are noted at mile 18 and mile 46½.

miles

0

**Karabigha.** Road reported in 1914 to be a good metalled chaussée. In 1911 it was bad, but there were indications that it was to be improved. At first it runs S. by W. through marsh-land.

miles

- 7      **Chinar Köprü Köi** to l. on rising ground near the Bigha Chai, the banks of which here are high, steep, and slippery. A wooden bridge spans the river, crossed by a direct track to Bigha passable for arabas.
- Chaussée continues up the l. bank of the river.
- 10½      Cross the **Kara Atly Chai** by a wooden bridge.
- 13½      **Bigha.** Road continues up the river valley. The valley plain is flat, about ½ mile across.
- 17      Low hills close in.
- 18      Cross an oval plain at the mouth of a side-valley, much cut up by winter floods. Road now enters a narrow defile. The river is fairly wide, with a strong current. The hills here are covered with oak forest.
- 22      **Kavashyk** ; small kahve. The defile now opens somewhat into a valley with low foothills.
- 23½      Pass a valley in which lies **Halvajy** village.
- 31½      **Chan Bazar** village, head-quarters of a nahie. A great fair is held for 3 days here each year in the beginning of June. Warm spring ¼ mile distant.
- Road now very bad in parts. Two rivers are forded.
- 37½      **Büyük Tepe Köi** ¼ mile to N.
- A track comes in here from Chanak (see Route 3).
- 38      Sulphur spring (? to l.) and site of the ancient temple of Artemis Sebaste.
- 39      **Gyöljük**, residence of a mukhtar ; clean oda.
- Road descends a little to a stream and then ascends steadily up a lateral hill running S. or SSW.
- 45      Hill with 3 rounded summits to WNW., with a sharper hill due W.
- 46½      Watershed. **Muratly** village a little to E., out of sight. Road now runs through the forest of **Kilisse Alan** ; trees mainly oaks with a few pines ; going very bad, through tangled hill country.
- 49½      **Haji Bekirler**, Yürük settlement of very rude construction ; houses mostly of wood, with flat roofs



miles

of broken stone and wooden ladders leading up to them. The middle plain of the Scamander comes in sight, and in the distance the Chigri Dagh.

Road descends nearly to the level of the plain passing a village called **Chiftlik**, beyond which there is an ascent for 200 or 300 ft.

From the summit Bairamich is seen in front.

60      Cross the Scamander by a bridge and enter **Bairamich**.

## ROUTE 16

**BIGHA—BALIA BAZAR KÖI, ? 41 miles**

This route is an easy horse-track through picturesque wooded country. Part of the last stage along the plain of Avunia perhaps coincides with the first few miles of Route 20.

There is no information as to supplies. Water should be plentiful throughout.

- 0      **Bigha.** General direction now SSE.
- 1      Ford the **Kazdagh Su** (? Bigha Chai or Chan Chai) running from SW. to NE. The track ascends S. up a small deep side-valley between high wooded hills. The stream in the valley, called the **Kyrk Gechit Su**, has to be forded many times.
- 6      Ascend SSE. over heights.
- 11      Reach the plain of Inova.
- 12      **Inova** village. From here the track continues over fine wooded hills down into a small valley, passing **Bekten** village (? 21 miles) on the l. The valley broadens to a plain, which is crossed, and the track ascends over the heights which border the plain to **Navrus** village, beyond which another plain is crossed to **Injeköi** (? 26 miles). Beyond this place there is an ascent over the finely wooded Assar Dagh to **Karabey** (? 33 miles). According to one authority the descent

miles

on the S. side of the mountain is very steep. Another traveller, however, says that the road is easy. From Karabey the direction changes to E. over plain and low hills to **Balia Bazar Köi** (?41 miles).

## ROUTE 17

### PANDERMA—VATHY

*Via ARTAKI*, about 25 miles

This route for the first  $7\frac{1}{2}$  miles follows the road already outlined (in the reverse direction) in Route 2 (miles 96–88 $\frac{1}{2}$ ). At Edinjik (mile  $7\frac{1}{2}$ ) it turns NE. for  $2\frac{1}{2}$  miles and then changes direction to NW., following the coast to **Artaki** (Erdek; 16 miles). From Artaki to **Vathy** the road was reported in 1914 to be a rough track just passable for light carts. An authority of 1901 calls it a chaussée. The col which has to be crossed between the **Kapu Dagh** on the E. and **Klapsi** on the W. is 935 ft. high, and the road-surface is rough and stony.

Olives, fruit, fish, vegetables, and mutton may be had at Artaki, and the plain at the W. side of which Vathy lies is of fair extent and well cultivated. Water is scarce till the marsh at the isthmus is reached. Elsewhere it is fairly plentiful from streams.

The neighbourhood of the marsh at the isthmus is very unhealthy.

## ROUTE 18

### PANDERMA—VATHY

*Via KOJA BURGAS*, about 25 miles

The first part of this route runs along the shore of the Bay of Panderma and follows a chaussée which was completed by military labour in 1917 as far as Artaki. Between it and the

other chaussée lies the bare hill of **Delikli Bayr** commanding both roads and the isthmus.

Beyond the isthmus the route leaves the chaussée and proceeds past **Yeniköi** to **Ermeniköi** (about 8 miles), a village of Turkish-speaking Armenians at the mouth of a valley. The water from this valley is excellent and is taken in barrels to Panderma. There are many small granite quarries in this neighbourhood for the production of paving-stones. The track then ascends the valley N., passing gullies in which grow scrub and scattered trees. The summit is reached at a height of 1,020 ft., and the route continues to the monastery of **Phaneromeni** (about 13 miles), lying among scrub in an open valley between gently sloping hills. Below the monastery the valley becomes narrower for some distance and then opens on to a small plain on the N. coast of the peninsula at **Koja Burgas** (Langada; about 15 miles), a Greek village of 120 houses. From here the road is very difficult, running up and down hill above steep cliffs. The hills on the l. are well wooded with chestnuts, oaks, &c., and are said to be full of wild pig. The abandoned monastery of **Hagios Georgios** is passed in a valley near the shore, and farther on is **Sheitanköi** (or **Katatopos**) near another monastery called **Kimisis Theotokou**. Continuing through similar scenery the track passes the monastery of **Hagia Triada**, in a small plain with mulberry, maize, vine, and onion cultivation, to **Vathy**.

## ROUTE 19

### PANDERMA—BALIA BAZAR KÖI, 51 miles

This route appears to have been recently metalled as far as **Gönen** (mile 26), up to which point the country passed through is easy undulating plateau. The ground over this stage is liable to be heavy after rain, but the streams which have to be crossed are said to be easily fordable. South of the **Gönen** plain the hills are entered, but no serious obstacles are reported.

An alternative route to Gönen, reported in 1915 to be little used, follows the coast road via Edinjik to Musacha, and thence fording the river ascends the valley.

Supplies are fairly plentiful as far as Gönen, and there are large supplies at Gönen itself. Beyond that point there is only scanty cultivation. Water is plentiful throughout. From about mile 36 there is apparently plenty of wood or scrub, and at mile 40½ there is a fairly important lignite mine.

miles

- |     |   |
|-----|---|
| 0   | <b>Panderma.</b> The route at first ascends along the chaussée which runs between Panderma and Edinjik (see Route 2).   |
| 2   | Tumulus to r. Near here the present route branches SW. from the Edinjik chaussée and runs over gently undulating ground broken by streams to the Manyas Göl.  |
| 2½  | Ruins on r.   |
| 3   | Salt-spring, the overflow of which forms a brook running SE. to the Manyas Göl.   |
| 6½  | <b>Charlyk</b> village ¾ mile to r. on a stream which is crossed ¾ mile farther on.   |
| 8½  | Tumulus on r. Track descends gently.  |
| 10  | Cross a tributary of the Manyas Göl to <b>Boiraly</b> village, a settlement of Tatars from the Dobruja. About here apparently a track from Edinjik crosses the present route (see Route 21, mile 7½).<br>Track again ascends gently.    |
| 10½ | Tumulus on l. and <b>Chepni</b> village ½ mile farther E. Descend and cross another stream 1½ mile farther on; Killik village 1½ mile to r. Beyond the stream the track curves round under the steep eastern face of the Soguklar Tepe. |
| 13½ | <b>Soguklar</b> village; 2 springs.   |
| 15  | About here the watershed between the Manyas Göl and the Gönen Chai valley is crossed. The track follows the r. bank of a stream running to the Gönen Chai.  |

miles

16

**Munamak** village, a settlement of Muhajirs from Silistria,  $\frac{3}{4}$  mile to r. on a tributary.

For the next few miles, as far as Gönen, there is no description of the route available, but the country appears to be easy. Several small streams have to be crossed.

An alternative but considerably longer track runs SE. descending gently past a spring to **Kazaklar**, a Cossack settlement on the W. side of the Manyas Göl (see Route 21, mile 15). From there this track strikes SW. over easy country, partly cultivated, partly covered with scrub, to **Tatar Köi**, a settlement of Tatars from the Dobruja. Near Tatar Köi there was said in 1901 to be a burning seam of coal which had taken fire during the burning of scrub. From here the track bends W., crossing the heads of several streams, to Gönen. The total distance to Gönen from the point where this track leaves the direct pack-road is about 16 miles.

26

**Gönen**, alt. 80 ft., large Turkish village in the valley plain not far from the Gönen Chai. It is the head-quarters of the kaza of the same name. The plain is fertile and cultivated with cereals. About  $\frac{1}{2}$  mile NW. of the village, beside the river, is a hot spring with a fine Turkish bath, and near it the ruins of ancient baths. There is said to be a good stone bridge across the river at Gönen. In 1910 the bridge was a rickety one, of wood. The stream is swift, with a stony bed. It is fordable in summer.

A great horse-fair is held near Gönen every year from the 10th to the 13th of June.

The track now runs S. by W. over gently undulating plain, partly cultivated, partly pasture. An alternative track, of which no details are available, crosses the Gönen Chai and runs up the l. bank of the river.

28 $\frac{1}{2}$ 

Cross a large stream which comes down through

miles

the hills on the S Easy ascent from the Gönen plain.

29 **Gisman**, small village; some tumuli near at hand on the r.

31 **Dede** village  $\frac{3}{4}$  mile to r. on the l. bank of a tributary of the Gönen Chai. Track ascends the stream valley.

32 **Chambajy** village to r. on the l. bank of the stream.

34 Pass the head-waters of another tributary. The track here crosses the summit of a broad spur, alt. 1,020 ft.; cultivation and scattered trees.

Descent into the upper valley of the stream crossed at mile 28 $\frac{1}{2}$ .

36 Cross to r. bank of the stream and ascend past its source. Oaks now give place to beeches and ever green scrub.

37 $\frac{1}{2}$  Summit, alt. 1,470 ft. Descend the valley of a stream flowing SW. to the Deïrmen Dere, a tributary of the Avshar Chai.

40 Cross the stream.

40 $\frac{1}{2}$  **Manjylyk** coal mine, alt. 680 ft. It belongs to the company which works those at Balia Maden, with which place this mine is connected by a light railway 18 $\frac{1}{2}$  miles long. In 1900 the loaded wagons were drawn up to the summit by oxen and then run down under their own weight to Balia Maden. On the return journey they were pulled up from Balia Maden by horses and then run down to the mine. An electric plant to displace this method of transport was being built in 1900 by Siemens & Halske of Vienna.

The Manjylyk seam is 30–50 ft. thick. In 1900 one of the galleries had been abandoned, having gone on fire owing to the large proportion of sulphur in the coal. The worked-out sections are always packed to prevent this happening in other cases.

The track now runs SSW. above the Deïrmen Dere

miles

on the l. The stream flows in a narrow winding valley. Cultivated fields alternate with pasture-land; evergreen and deciduous oaks are the chief trees.

42 $\frac{3}{4}$  Cross the stream and ascend over a spur.

43 $\frac{1}{4}$  **Manjylyk** village, alt. 735 ft. The track continues SSW. across two of the streams which form the upper waters of the Deïrmen Dere. After crossing the second it bends W. across a third branch and over a small plain.

46 **Arabjyk** village. The track again turns SSW. across a branch of the Deïrmen Dere and ascends over a saddle.

47 $\frac{1}{4}$  Summit, alt. 1,095 ft. Descend WSW. through oak scrub into a wide plain watered by the Gönen Chai, here called the Akmak Dere. Five to six miles W. on the N. side of the plain lies the Greek village of Alakilisse.

51 **Balia Bazar Kõi**, alt. 565 ft., formerly the chief place of the district.

## ROUTE 20

### BALIA BAZAR KÖI—BAIRAMICH, 52 miles

For over 20 miles this route is a fair araba-road. For the next 8 or 10 miles it is merely a horse-track ascending over the watershed between the Gönen Chai and Menderez Chai. This part of the journey is thickly wooded with pines. At about mile 30 the road again becomes fit for carts.

Supplies are generally scanty.

0 **Balia Bazar Kõi**. Road runs across the river plain; easy going; occasional undulations over spurs from the hills on the N.; alternate sparse wood and cultivation.

1 $\frac{1}{2}$  Ford the Gönen Chai.

miles	
5½	<b>Engeji village.</b>
9½	<b>Koyun Eli village.</b> The hill to r. is thickly covered with oak forest. Road runs among trees and fields between the river and the hills.
14	<b>Khydrilar</b> built round a knoll projecting from the hills; hot spring behind the village and another about 1 mile to W. Fine view S. and W. of the Ida chain.
	Road runs towards the head of the valley.
19½	<b>Chaush Kõi.</b> The river is forded four times within the next mile.
22½	Saw-mill; the wood is sent down the river to Panderma for export.
	Road now degenerates into a mere horse-track. It enters a narrow ravine and follows the river for a long way, passing a spring. Then at last it fords and leaves the stream. There is thick pine forest throughout.
27	Summit; fine views back, little view forward. Fairly easy descent.
30	Track again becomes fit for carts; much timber.
33	Ford the <b>Menderez Chai</b> to <b>Kara Kõi.</b> Here Route 13 is joined and followed down the valley (see p. 191, under Alternative Track).
52	<b>Bairamich.</b>

## ROUTE 21

EDINJIK—MANYAS, 26 miles

This road is unmetalled but fit for carts in dry weather. The country traversed is generally uninteresting. Supplies in small quantities are obtainable throughout. Water is procurable from the streams which flow into the Manyas Göl.



miles

- 0      **Edinjik.** Track runs S.
- 3      **Koru Köi**, Circassian village. Track descends a hill.
- 4½     Ford a stream and ascend the hill on the S.
- 6      Summit; view of the Manyas Göl, to which the country sinks in successive decreasing undulations, very bare and parched in August. A considerable amount of cereals is grown round here.
- 7½     Ford a stream and pass a small ruined stone bridge. About here apparently the track crosses the road from Panderma to Gönen (see Route 19, mile 10). Short ascent.
- 9      **Chepni**; mosque and large graveyard. From here the ground slopes gradually to the lake.
- 12½    Cross a ditch in the plain by a small Turkish bridge. **Ismula**, Bulgar village 1 mile to l. on a low spit projecting into the lake.
- 15     **Kazaklar** (or **Kazak Köi**), Russian colony of Cossack fisher-folk, whose members preserve a very distinct type, with fair hair, blue eyes, and stout solid build. Most of these Cossacks returned to Russia in 1913 and 1914. There were still some of them left in the spring of 1915.
- 18½    **Hammanly** village on the S. shore of the lake.
- 20     **Salurköi**. Track turns S. up a low hill.
- 22½    Cross the **Avshar Chai**, which comes down a wooded valley on the S. The river is of considerable size at this point but is fordable in late summer. Village (? **Kuluk**) on the r. bank.
- 26     **Manyas** at the S. edge of the plain and cut off from sight of the lake by the low ridge beyond the **Avshar Chai**. A great horse-fair is held near here annually in the early part of June.

## ROUTE 22

## MANYAS—BALIKESR, 32 miles

This route is a track leading over rolling country. In dry weather it is passable for carts, though with some difficulty. It crosses Route 24, but the available evidence is insufficient to locate the point at which it does so. The last part of the route at least is part of a regular caravan-road.

Supplies are scanty. Timber is plentiful for the first 11 miles.

miles

- |     |  |
|-----|--|
| 0   | <b>Manyas.</b> Track runs S. uphill.   |
| 1   | <b>Kapakly</b> , small well-built village overlooking Manyas. A track branches SE. via <b>Muratla</b> to <b>Eski Manyas</b> (see Route 24, mile 26) about 7 miles distant. |
|     | Descend S. from Kapakly and then begin a long ascent through forest, mainly oak but mixed with beech, birch, &c.   |
| 6   | Reach a summit and descend again immediately ; steep descent.  |
| 6½  | Bridge over a stream at the bottom of a ravine.  |
| 7   | <b>Erejik</b> , Turkish hill village of wooden houses.   |
| 7½  | Cross a summit.  |
| 9   | Summit and watershed.  |
| 11  | The forest comes to an end.  |
| 14  | <b>Yajyla</b> village.   |
| 20  | <b>Shamly</b> , alt. about 1,000 ft., in a dip in the hills. Track ascends a ridge.  |
| 21½ | Summit.  |
| 22½ | Descent into a valley.   |
| 23½ | Bridge over a ditch at the bottom of the valley.   |
| 24½ | <b>Kavakmü</b> (? Kavakly).  |
| 26½ | Summit of highest ridge ; fine view S. over the plain of Balikesr to the hills beyond and N. over  |

miles

Shamly to the Manyas Dagħ. Chatalja Dagħ is visible to E.

Steep descent into a small valley.

27    Begin to ascend the next ridge.

27½    Summit. Track descends past springs.

32    Balikesr.

## ROUTE 23

### PANDERMA—SUSURLU, 34 miles

This is a macadamized road, reported in 1911 to be much cut up by the carts conveying boracite from the mines above Azizie.

Supplies are generally plentiful, and there is no shortage of water except in the immediate neighbourhood of Panderma. For about 8 miles after Hammam (mile 20½) water may be had from wells. Fuel could not be obtained in any considerable quantity elsewhere than at Susurlu.

0    **Panderma.** The road is said to rise 260 ft. in the first ¾ mile. The railway lies to l.

1½    Railway loop-siding to l.

The chaussée to Edinjik and Artaki branches to r. (see Route 17). The present route bends SE. across partly cultivated plateau country, which sinks gradually down to the broad valley of the Deblekői Chai.

6½    Cross a tributary of the Deblekői Chai by a single-span wooden bridge (in good order in 1915). The road now crosses the railway and turns S. by E. across a low limestone ridge, through which the river on the r. has cut a short narrow valley.

7¾    **Sygyryjk** railway station. Ancient bridge, the **Güzelje Köprü**, to r. at the mouth of the valley. It probably carried an ancient highway from the W. towards Brussa. A modern chaussée to Brussa via Mikhalij

miles

branches E. here from the present route (see Routes 51 and 55).

The road now crosses the W. end of a stretch of plough-land extending from the Manyas Göl on the W. to the Susurlu Chai on the E.

9 Ascend again over limestone and continue through gently undulating country, which slopes on the W. to the Manyas Göl and on the E. rises to a plateau about 400 ft. above sea-level.

10½ **Sygyriyk** village to r. Shomna village 1½ mile ESE.

14½ Tumulus on l. The road ascends to a low col.

15½ Summit, alt. 358 ft. **Dogha** village on l.

A track to Eski Manyas and Edremid here branches SSW. from the chaussée (see Route 24).

The present route descends SSE.

16 **Aksakal** village and khan, alt. 171 ft. **Aksakal** railway station 1 mile to W.

19½ Cross the **Karadere** by a wooden bridge about 230 ft. long and 20 ft. wide. (This bridge apparently also carries the railway.) There are 20 arches resting on wooden piers and giving a height of over 30 ft. above the water. Ground flat and open at either end of bridge, sometimes swampy.

Road now runs close to the railway on the W. side of it.

20½ **Hamman** village on r. An unmetalled cart-track to **Mikhaliĭ** branches to l.

Direction now nearly S.

23 **Okju Göl** (Okjular) railway station.

24½ **Umyd Eli** village; unhealthy district; 2 fords to SE. over the Susurlu Chai.

27½ Road recrosses to the E. side of the railway. The ground begins to rise to W. of the road, which now follows the **Susurlu Chai**, here a deep river with fairly strong current.

33½ **Susurlu** railway station on the r.

miles

33½

Cross the **Hatab Dere**, a tributary of the **Susurlu Chai** (? by a wooden bridge).

The railway here leaves the road and ascends the **Hatab Dere** valley, crossing the stream by an iron bridge (see p. 146).

34

**Susurlu** (**Susygyrly**), alt. 275 ft., a flourishing market town and head-quarters of a *nahie*, inhabited chiefly by Turks and Circassians. It was formerly an important station on the old Turkish post-road which ran via **Mendekhora** (8 miles E. of **Balikesr**), **Gelembe**, **Palamut**, and **Manisa** to **Smyrna**.

## ROUTE 24

**PANDERMA—EDREMID**, 110½ miles

For about 15 miles this route follows the macadamized road from **Panderma** to **Susurlu**. Beyond mile 15½ it is an unmetalled track, but apparently nowhere very difficult.

The hill country entered at **Eski Manyas** (mile 26½) is well wooded, and there is plenty of water throughout.

0

**Panderma**. For the first 15½ miles see **Route 23**.

15½

The present route here leaves the **Susurlu chaussée** and strikes SSW.

15½

Alt. 300 ft. Tumulus on r., giving a wide view of the surrounding country.

17

Descend to the broad marshy valley of the **Karadere**, which carries the overflow of the **Manyas Göl** E. to the **Susurlu Chai**.

17½

**Ergili** village on the N. side of the valley.

18

Cross the **Karadere** by a bridge. The water is of a yellowish colour and deep, with a breadth of about 100 ft.

18½

Ascend over a low ridge. Several tumuli to r. and l.

miles

19½ **Yeni Köi**, Circassian village on the S. slope of the ridge. The track again crosses a broad plain, with marshy meadows.

21½ **Dümbe**, small village on a mound beside a stream, which is now crossed.

22½ Ascent over a spur into a side-valley. Gravelly soil; some cultivation.

25½ Cross the stream in the valley and ascend its western branch.

26½ **Eski Manyas**, alt. 350 ft., small Circassian village of wattled huts at the mouth of a hill valley, in which is a strong spring. Above the village rises a steep spur separated from the surrounding hills by steep valleys and joined to them only by a low narrow isthmus. The front towards the plain and the lake is conical and covered with scrub. On this spur are traceable ancient ruins, probably those of the fortress of Poemanenon. The position is well chosen for commanding the road westward between the Manyas Lake and the hills, the road up the Susurlu Chai valley, and the whole plain on the N.

Outside the fortifications, on the N. side of the isthmus, are the ruins of a deserted Turkish village, including two ancient mosques and a ruined turbe.

A few olive-trees are to be seen here. They occur nowhere else in the interior of Mysia.

The track now enters the hill country, which extends as far as Balikesr and Ivrendi. It runs at first along the western slope and across a col of the **Kel Dagh**, alt. 2,950 ft., which on the S. side of Eski Manyas rises in two ridges running respectively W. and NW.

29½ Ascent at first through beech scrub and then through oaks.

30½ Summit, alt. 1,930 ft. View opens out over a broad depression broken by easy valleys and

miles

bounded on the W. by heights running N., on the NW. by the Kel Dagħ, and on the SW. by ridges running NW. The track descends, through fine beech and oak woods, past the villages of **Dümberis** and **Sheitler**.

32½ Cross a large stream and continue over a plateau.

34½ **Batak**, village composed of two mahallas, alt. 1,300 ft. Gyobelan, a Bulgarian village, lies on the hill-slope 1½ mile NW., and Ishaje, a large Muhajir village, is 2 miles SE.

The track now descends W. across the **Mevlevler Deresi**, alt. 835 ft., and then ascends to a plateau.

37½ **Alayabayr**, Bulgarian Christian village. Ascend gradually NW. over a ridge covered with fine oak and beech forest.

39 Summit, alt. 1,820 ft. Direction changes to SSW.

40 **Yeroluk**, alt. 1,485 ft., Yürük village on flat ground forming a watershed between streams flowing N. and those flowing W.

Track continues over undulating country largely covered with oak forest.

42 Cross a stream; ruined Byzantine castle ¾ mile SE.

43 **Assaralan** village. Direction now W. and then SW. down into the valley of a large stream formed by brooks from several converging valleys.

47½ **Ilija** village on the l. bank of the stream. A track from Gönen to Balikesr comes in here on the r. The baths from which the village takes its name are situated beside a bridge a little lower downstream on the opposite bank, and are formed by the overflow of a hot spring, from which the water is brought by a channel built in ancient times; alt. at baths 350 ft.

49½ The track continues down the l. bank of the stream. **Nerjiler** village ½ mile S. The stream here bends sharply N. through a limestone ridge to join the

miles

Avshar Chai. Track ascends the valley of a tributary from the SW. Several small streams from the S. are crossed. The hills are well wooded.

52½ **Kayalar** village near a col, which the track crosses, alt. 855 ft. A track apparently continues SW. to Balia Maden. The present route turns SSE., the track ascending along a ridge.

56 **Büyükbunar**, Muhajir village, alt. 1,120 ft.

Track now descends in a general S. direction through oak scrub.

59¾ Cross a stream, alt. 460 ft., which flows W. to the Avshar Chai. Direction still S. for some distance and then SW. and S. round a projecting spur.

63 **Alidemirji**, small village, alt. 910 ft., formerly the head-quarters of a nahie.

A track from Balikesr to Balia Maden crosses the present route here. It apparently leaves the Edremid-Balikesr chaussée on the W. side of the Kara Gedik (see Route 25, mile 51) and runs via **Naiblü** (? 8 miles from Balikesr) and **Bakajak** (about 1½ mile from Naiblü and 5 miles from Alidemirji). From Alidemirji the track crosses the **Avshar Chai** and ascends over a high ridge to **Balia Maden** (about 8 miles from Alidemirji).

Track now turns SW. across the small plain, on the N. side of which Alidemirji lies. At two points on the NW. side this plain opens into the Avshar Chai valley; on the SW. it connects with the wider plain of Agrime.

69 Cross a stream flowing NW. through the Agrime plain to join the Avshar Chai near Avshar, alt. 500 ft.

71 **Dömenij** village, alt. 900 ft. Direction still SW. through thickly wooded country.



miles	
72½	Byzantine castle to r. on a precipitous limestone cliff above the narrow valley of the Avshar Chai.
74	Track joins the chaussée which runs between Edremid and Balikesr. For the rest of the journey see Route 25 in the reverse direction from mile 36½.
110½	<b>Edremid</b> , alt. 50 ft.

## ROUTE 25

### EDREMID—BALIKESR, 56 miles

This road is called a chaussée, but in 1902 most of the bridges were in ruins. The road was reported macadamized and passable for artillery throughout in the autumn of 1913. A rather doubtful report of August 1914 stated that the roadway and bridges were then in good repair.

Supplies are scanty from about mile 10, except where the country opens out, e. g. N. of Ivrendi (mile 31½) and Agrime (mile 41½). Water is plentiful.

A report of 1912 states that the light railway from the mines at Balia Maden was extended in 1907 from Otmanlar (see mile 29½ below) to the edge of the Edremid plain. There is no further information available on this head.

- |    |   |
|----|---|
| 0  | • <b>Edremid</b> , alt. 50 ft. Road runs SE. over the plain, crossing several streams. In 1913 it was reported to have sunk seriously some distance from Edremid owing to the presence of a marsh at that point.  |
| 5  | <b>Freneli</b> , a market town. Cross the Freneli Chai. Direction now E. up the valley, which here is 3–4 miles broad, bordered on both sides by terraces about 130 ft. high, behind which rise the hills; olive cultivation both in the valley and on the slopes. The valley plain occasionally widens out; river-banks about 15 ft. high. |
| 9½ | Cross the <b>Köilüji Chai</b> .   |

• miles

10

**Chal Kahve.** Hill on l., alt. 935 ft., probably the site of the ancient Lyrnessos. This place apparently commanded the entrance to the hills, the river here emerging suddenly from its upper valley into the open plain. The hill falls steeply to the river on the N. side. The other sides slope down in small terraces, on which a large number of ancient house-walls are to be seen.

Road crosses a low rise, on which grow valonia oaks, and descending crosses the river. It then ascends along the N. slope. Cultivation becomes scanty; some firs.

13½

Alt. 1,035 ft. Road descends again towards the river.

15½

Road now finally leaves the river valley, which here becomes very narrow, and ascends the slope NE.

17½

**Khan.** Road now lies across a broad plateau, which forms the watershed between the rivers flowing towards the Aegean and those which run to the Sea of Marmara.

20½

**Khan Derbend**, alt. 1,530 ft., on the N. edge of the plateau. Here a chaussée (in disrepair in 1902) branches NE. to Balia Maden.

Present route turns ESE. across undulating plateau with low oak scrub and the remains of fir forest; on the l. a valley with stream running E.

29½

**Otmanlar** village, alt. 1,130 ft.; view over the Ivrendi basin, in which several streams unite to form the Avshar Chai. The hills on the S. side form a gently rising plateau watered by the Kenik Chai.

Road descends steeply to the plain and runs E.

31½

Horse-trolley line branches NE. to Balia Maden (10½ miles).

**Ivrendi**, large Turkish village about 2 miles S. on the plateau.

Cross the **Chinarjyk Dere**.

miles

- 32½      Cross a stream which flows S. to the Avshar Chai.
- 35½      Cross the river and continue E. up a valley. The road was in good condition in 1902, but little used.
- 36½      A track branches to l. to Eski Manyas and Panderma (see Route 24 in the reverse direction from mile 74).
- 38½      Summit, alt. 835 ft. Road descends with a stream on r.
- 40      Reach the plain; corn, rye, and fruit cultivation.
- 41½      **Agrime** village on r. at the foot of the hills.
- 43½      Cross a stream.
- 45      Leave the plain and ascend through flat hill country covered with oak scrub.
- 46      Col, alt. 965 ft. Road crosses several easy valleys.
- 49      Cross a large valley with a stream flowing S. to the Uzunja Dere. Road now ascends NE.
- 51      **Kara Gedik** summit, alt. 1,210 ft. Descend a valley with stream on l.
- 56      **Balikesr**, alt. 570 ft.

## ROUTE 26

IVRINDI—BALIA MADEN, 12½ miles

This is a pack-route throughout.

- 0      **Ivrindi**, alt. 850 ft. Track descends N. and crosses the plain, following a tributary of the Avshar Chai.
- 3      Track bends NNE., following the stream valley between easy hills covered with evergreen scrub. The Balia Maden light railway is close to l.
- 5      Cross the railway and continue up the W. side of it.
- 7½      Watershed, alt. 1,210 ft. Track recrosses the railway; some cultivation.
- 8¾      Recross the railway. **Chakallar** village to l. Track ascends out of the valley over a ridge called **Demirji Alan**.

miles

12½

**Balia Maden**, alt. 655 ft., Greek and Turkish village beside fairly important lead mines ; water from streams and wells. Wheat, barley, millet, and some maize and tobacco are grown in the district.

## ROUTE 27

BALIA MADEN—KARAİDİN, 25½ miles

This is a horse-track throughout, difficult in many places. It must be quite impassable in winter, as the dikes which accompany it for the greater part of the journey help to prevent the escape of the surface water.

There are a fair number of villages along the track, many of them apparently of recent foundation. All the villages from Bengiler (mile 8) to Karaîdin are inhabited by settled Yürüks.

The country traversed is well wooded, but has no striking features. It is broken by numerous streams, most of which run northwards to the Gönen Çhai (Akmak Dere).

- |     |   |
|-----|---|
| 0   | <b>Balia Maden</b> , alt. 655 ft. Track crosses the valley on the W. side of the village and ascends the ridge through fields and scrub ; summit of ridge 1,083 ft. It then descends across a valley wooded with pines. |
| 3½  | <b>Mustajab</b> village, alt. 690 ft., in a broad fertile valley. Track ascends through meadows, cereal cultivation, and evergreen scrub, across several ridges and valleys.  |
| 7   | Cross a stream.   |
| 8   | <b>Bengiler</b> , Yürük village, alt. 810 ft. ; wheat, barley, rye, millet, maize, vine and tobacco cultivation. Track again ascends.   |
| 11½ | <b>Yailanjyk</b> , small village, alt. 1,510 ft. ; two stream valleys run S. to join the Avshar Çhai. The country to W. is a rolling plateau.   |

miles

Track crosses a valley, through meadows, passing two small villages, **Haji Hassanlar** and **Ibramlar**; pine and oak forest on the slopes.

Path continues through thick woods, with occasional evergreen undergrowth and heather.

14½

Summit, alt. 1,915 ft.

17¾

Ruins to r. at the junction of two streams.

18¼

**Kyrklar** village between two streams.

**Kyrklar** seems to be the same place as the **Kökhlar** of an old authority. This traveller reached the place from **Balia Bazar Köi** on his way to **Edremid**. There is no evidence to show whether the track he followed is still in use. It led SW. by W. from **Kökhlar** up a wooded spur on to the watershed, reaching the large village of **Madün** in 2 hrs. The direction from here was WSW. through thick pine woods over a ridge and past two springs (apparently about 1 hr. from **Madün**). About 1 hr. farther, after steep ascents and descents another ridge was reached, from which a wide view to the S. was obtained. From this point it was 2½ hrs. in a SSW. direction to the plain of **Edremid**.

Present track continues over the eastern spurs of **Mt. Ida**, crossing valleys varying in depth from about 150 to 300 ft.

22¾

**Kalabak** village.

25½

**Karaïdin**, alt. 780 ft., Turkish village on the hill above a valley from the SW. **Giaur Karaïdin**, a settlement of colonists from **Mitylene**, lies 1 mile farther up the valley. Still farther up the valley are abandoned silver mines.

From **Karaïdin** a track runs ENE., at first through pine forest and then through evergreen scrub and cultivation to the **Akmak Dere** (the **Gönen Chai** in its lower reaches), which it follows down to **Balia Bazar Köi**.

## ROUTE 28

## BALIA MADEN—BALIA BAZAR KÖI, 15 miles

This track is fit only for pack-transport, and the going is very bad in many places. There is some oak forest on the hills along the route.

miles	
0	<b>Balia Maden</b> , alt. 655 ft. Rough ascent up the ridge facing the village, and longer and still rougher descent on the other side.
2½	Wooden bridge over a stream flowing N. down a valley. Track again ascends.
5	Short descent and another rise.
6	<b>Doghanlar</b> . Track ascends through oak forest over a high ridge.
10	Descend by a bad path; fine views over the Gönen Chai valley. The last part of the track runs down a gorge, in the sides of which are caves.
15	<b>Balia Bazar Köi</b> , alt. 565 ft.

## ROUTE 29

## BALIKESR—SUSURLU, 26½ miles

The road detailed below is a chaussée marked with kilometre posts and followed by the telegraph. It follows the general line of a Roman road.

Supplies are scanty after the plain of Balikesr is left until about mile 17. Water is plentiful throughout.

0	<b>Balikesr</b> , alt. 570 ft. Road runs NE. over the plain, crossing two streams and passing an isolated hill. The railway lies to r. of the road.
4½	Reach the N. corner of the plain where the <b>Boghaz Chai</b> , an important stream, enters it; mill near.

miles

- Road crosses the stream (? by a wooden bridge) and ascends; railway loop-siding to r. The route now may either follow the chaussée or keep to an ancient paved horse-track which cuts off the bends in the main road. The country in front is an undulating plateau, out of which rise a few conical peaks; some shrubby vegetation with scattered evergreens.
- 9 $\frac{1}{4}$  Summit, alt. 1,010 ft. Road crosses the railway and descends into an easy valley with pasture and cultivated fields.
- 10 $\frac{1}{2}$  Bridge over a stream (apparently the Hatab Dere).
- 11 $\frac{1}{4}$  **Yeni Kõi** station and village  $\frac{1}{2}$  mile to l. beside the Hatab Dere, which the railway now follows NE. Road bends round to E. over undulating hills. On the l. between the Hatab Dere and the road is a high massive limestone ridge.
- 12 Bridge over a stream at the bottom of a depression
- 12 $\frac{1}{2}$  Top of a ridge.
- 13 Stone bridge over a small side-valley from the r.
- 13 $\frac{3}{4}$  Wooden bridge over a stream. Road runs high on the l. side of a wooded ravine.
- 14 $\frac{1}{4}$  Summit.
- 15 $\frac{1}{4}$  Reach the **Kara Dere**, which here emerges into a broad valley from a gorge called **Demir Kapu**, alt. 330 ft. Road crosses the river by a bridge close to a guard-house and spring. It then runs ENE. down the river valley; fairly steep rocky wall to r., gently sloping undulating plateau to l. with much cultivation.
- 17 **Demir Kapu**, Circassian village on r. The village is also known as Chinarly. The horse-track to r. of the chaussée leads from here in rather over  $\frac{1}{2}$  hr. to the borax mines.
- 19 Borax mines of Sultanshehir to r. and l.
- 20 $\frac{1}{2}$  A road comes in on r. from Bigadich (see Route 72).
- 22 The **Kara Dere** joins the **Simav Chai**.

miles

- Azizie** village to r. between the rivers.
- 22 $\frac{3}{4}$  **Sultanshehir** village at a bend in the river. The valley here is fairly narrow. Road bends E., following the river.
- 23 $\frac{1}{4}$  Ruins of a late Roman or Byzantine bridge to r. The valley begins to open out. Road continues down the river, which here is called the Susurlu Chai; magnificent trees and good grass.
- 26 $\frac{1}{2}$  **Susurlu**, alt. 275 ft.

## ROUTE 30

## AIVALYK—EDREMID, 32 miles

The route detailed below is the direct road from Aivalyk to Edremid except from mile 14 $\frac{3}{4}$  to mile 25. The direct road was reported in 1914 to be a chaussée throughout.

Supplies and water are plentiful.

- 0 **Aivalyk** (also called Kydoniai by the Greek population). Road runs NE. along the coast; low hills with olive cultivation close to r.
- 2 $\frac{1}{2}$  **Hagios Nikolaos** monastery on a flat pine-covered promontory.
- 6 Steam flour and oil-mill on a plain at the mouth of a large valley, down which a stream comes from the S.
- 8 **Kerem Köi**, alt. 190 ft., inhabited by Greeks and Turks. The road now lies over flat hill country with olive and cereal cultivation and then descends to a broad plain.
- 10 **Yaya Köi**, Turkish village in the plain. Trikupis's chiftlik to l. This farm has a magnificent situation and has its own port and custom-house. It has a good water-supply.
- 10 $\frac{3}{4}$  Cross a stream. **Gömej**, Turkish village on the r.



miles

bank. The neighbourhood is said to export a considerable quantity of valonia.

Road now leads over gently undulating olive-clad hill country, broken by valleys.

13½ Cross a stream. **Karaghach** village on the r. bank.

14½ The direct route to Edremid apparently continues NE. Present route branches N. toward the coast.

17½ Cross the **Tabach Chai** near the mouth. The stream comes down a large valley from the SE.

Track now runs E. by N., skirting the coast.

18½ The hills recede, forming the eastern boundary of the large plain of Edremid.

20 **Kemer Scala.** Track bends N. still skirting the coast.

21½ Marsh on r., probably the ancient harbour of Adramyttium.

22 **Karatash**, isolated hill with Byzantine ruins, probably the site of the ancient Adramyttium. Fine view over the plain. Roadstead to l.

Track bends E., round the N. side of the marsh.

25 Cross the **Karynja Chai**, which comes from the S. and runs NNW. to join the Freneli Chai.

**Kemer**, alt. 60 ft., small Greek and Turkish town; pop. said to be normally 10,000, mainly Moslem. The place is the head-quarters of the kaza of the same name. There is a considerable trade in valonia and timber, and fruit is extensively grown, mainly pears and cherries.

Road now crosses level plain with pasture-land and cereal and vine cultivation; few trees.

26½ Cross the **Freneli Chai** (ancient Euenus) by a bridge; the banks of the river are marshy; water about 3 ft. deep in June. Road continues NNE., crossing several streams; trees become more frequent.

32 **Edremid**, alt. 50 ft.

## ROUTE 31

## AIVALYK—DIKELI, 21½ miles

There is no detailed description of the route available. It is not given on the most recent maps as a metalled road, but there should be no difficulty for carts in dry weather, as it lies nearly all the way along level plain. Most of the streams are nearly, if not quite, dry in summer, even the Ayasmand Chai carrying little water in the dry season.

The road first crosses the low hill behind Aivalyk into the fertile plain of **Yazariotis**, where there is extensive cereal and vine cultivation, and then rounding the forehills, which here come close to the shore, enters the large almost treeless coastal plain of **Ayasmand**. The soil is a light sand and is apparently well cultivated, at least in the neighbourhood of the market town of Ayasmand. This place lies about 8½ miles from Aivalyk on a small hill. It has a small harbour about 2 miles WSW.

From Ayasmand the road runs SSE., crossing the Ayasmand Chai after about 2½ miles. The river here may be completely dry in autumn.

The chiftlik of **Makaronia** is reached 7½ miles from Ayasmand. It lies on the coast, and the soil here produces considerable crops of cotton, tobacco, barley, broad beans, and sesame. There is also a good deal of valonia, and large herds of horses find grazing in the plain. Olive cultivation is found on the hills to E.

From Makaronia the road keeps SSE. along the shore for another 5½ miles to **Dikeli**, a small town on a shallow bay, with a population of about 6,000, nearly all Greeks. It is the port for the town of Bergama.

## ROUTE 32

AYASMAND—YOKARY BEYKÖI, about 18 miles

The track followed in summer runs first E. to the **Ayasmand Chai** under foothills covered with valonias and pines. There is some olive cultivation along this stage. At the river the path forks. One track enters the hills and ascends the r. bank of the river, which contains very little water in summer. The valley alternately narrows and widens. About 7 miles from Ayasmand a tributary is crossed, and the track leaves the river and reaches the hot spring of **Luja**, alt. 560 ft. Here the other branch of the track comes in on the r. This branch at the fork on the edge of the plain crosses the river and winds up the hill-slopes on the S. side of the valley. A short distance before reaching the spring it crosses the river by a wooden bridge near the village of **Chalty**.

The route now continues E. and crossing a broad ridge reaches **Ashaghy Beyköi**, alt. 1,705 ft. From here it continues across the hills past **Assar Köi** down into the plain of **Yokary Beyköi**, crossing the Ayasmand Chai by a bridge at the W. side of the plain.

In winter a track is followed which keeps to the high ground on the N. side of the river valley. The main ridge which it crosses appears to be the **Bakyrly Tepe** (7 or 8 miles from Ayasmand). On the eastern side of this ridge, at **Demirji Köi**, it is joined by a track from Aivalyk. From here it runs E., passing on the N. side of a hill with ancient ruins, probably those of Perperene. It joins the summer road at Assar Köi.

## ROUTE 33

MAKARONIA—YOKARY BEYKÖI, about 21 miles

The track runs first NE. through the plain to the foothills, the outward slopes of which are covered only with scrub. It then winds over hills forming an undulating plateau about 2,300 ft. high, broken by many winding valleys. Here and

there conical hills rise out of the uniform landscape. To S. the plateau is dominated by a broad ridge about 3,000 ft. high. The scrub of the foothills gives way to olives, valonias, and scattered oaks and pines. Higher up is pine forest with a few valonias. There are a considerable number of small villages and yailas on the plateau.

Running generally NE. the track enters the valley of the **Ayasmand Chai** and ascends the l. bank. It joins the route from Ayasmand at the bridge which the latter crosses on entering the plain of Yokary Beyköi.

## ROUTE 34

### YOKARY BEYKÖI—IVRINDI, about 39 miles

The track at first follows that described in Route 36. At **Chamamly** (5 miles) it strikes to r. through thick oak forest, and about  $4\frac{1}{2}$  miles from Chamamly crosses the ancient aqueduct which brought water from the **Madaras Dagh** (anc. Pindasos) to Pergamum. Crossing a col, alt. 3,755 ft., it enters the valley of the **Kara Su**, one of the head-waters of the Madaras Chai, and descends along the slope above the r. bank to **Tohumuluk** spring ( $14\frac{1}{2}$  miles). Then beyond the bare summit of **Zavderlik** ( $15\frac{1}{2}$  miles), alt. 3,825 ft., wooded country is entered, covered with pines and oaks and occasional chestnuts. The hill-slopes are rounded and easy. The track descends along the ridge between the Kara Su and another broad valley parallel to it on the r. Below a height of about 1,600 ft. the forest comes to an end, and the path leads through low oak scrub and then through cultivated fields, passing to r. the village of **Gümele** (20 miles). Turning E. it crosses a strong stream through the Yürük village of **Khaidar** (21 miles), alt. 1,175 ft. The country here is fertile, cultivated mainly with maize and barley. An ascent follows over a spur into a narrow valley with the Yürük village of **Ekichaköi**, beyond which the track ascends NE. to a col, alt. 1,960 ft., and then winds down the eastern slope to **Yeniye Köi** (25 miles). The rest of the journey is described in Route 37, miles 32–45 $\frac{1}{2}$ .

## ROUTE 35

DIKELI—BERGAMA,  $17\frac{1}{2}$  miles

There is no detailed description of this route available, but it presents no difficulties. It was apparently metalled before the war, and has probably been used for gun-transport in connexion with the coast defences from Dikeli to Aivalyk. It crosses a low rise round the northern outliers of the **Kara Dag**, and entering the lower plain of the Bakyr-Chai (see pp. 66-7) crosses a large tributary, the **Igin Chai**, by a long (? stone) bridge (about  $3\frac{1}{2}$  miles). It then continues E. and ENE. near the hills which bound the plain on the N.

The total distance is  $17\frac{1}{2}$  miles.

## ROUTE 36

## BERGAMA—EDREMID, 43 miles

This route seems to be a pack-road as far as Kemer, where the chaussée is joined (see Route 30, mile 25). It ascends N. by W. up the valley of the **Bergama Chai**, crossing from the l. to the r. bank by a bridge about  $\frac{1}{2}$  mile N. of the town. An alternative road by the r. bank joins here. At  $2\frac{1}{2}$  miles a road branches to l. up the valley of the Komur Dere. The present route crosses the Bergama Chai and  $\frac{1}{2}$  mile upstream reaches the point where the two main feeders of the Bergama Chai unite, the **Kömür Dere** from the W. joining the **Fundukly Dere** from the N. The former rounds the western end of a serrated ridge about 1 mile long and 200-400 yds. wide. The Fundukly Dere breaks through the middle of the ridge in a gorge called Kapu Kaya. The road passes through the ridge by a cutting, probably artificial, near the Fundukly Dere and, recrossing the stream, continues along the r. bank. The valley here is broad. The path then ascends along the pine-covered ridge which bounds the valley on the W. About  $7\frac{1}{2}$  miles from Bergama, at a height of about

1,800 ft., a prominent marble mass W. of the track is passed; called **Eski Maden**. A col, alt. 2,050 ft., is reached about 2 miles farther on, beyond which the track descends a wooded well-watered valley for about 3 miles to **Yokary Beyköi**, a large village picturesquely situated on the edge of a considerable plain watered by the upper streams of the **Ayasmand Chai**.

The track now runs NNE. across the **Kosak Chai** past **Karaveliler** at the mouth of a valley on the E. to **Chamamly**, about 5 miles from Yokary Beyköi. The path here becomes difficult, ascending over the bare ridges of the **Madaras Dag**h and then leading down to the valley of the **Karynja Chai** to **Kemer**, about 19 miles beyond Chamamly. From Kemer the chaussée (Route 30) is followed to Edremid.

## ROUTE 37

### BERGAMA—IVRINDI, 45½ miles

After the first 1½ miles this is a pack-track, but apparently nowhere difficult. It seems to be fairly regularly used. There is a fair amount of cultivation along the route, and water is procurable from streams. The hill country traversed is well wooded.

For the first few miles instead of the route given below it is possible to leave the Soma chaussée before it crosses the Kestel Dere and ascend the r. bank. This track forks near the ruins of the ancient aqueduct of Pergamum, the l.-hand branch continuing N. up the Kestel Dere. The r.-hand branch leaves the valley and crossing the hill-slopes joins the main route near Pasha Köi (mile 10½).

miles

0

**Bergama**, alt. 165 ft. Route at first follows the Soma chaussée (Route 38).

1½

The hills on the l. recede to the N. Present route leaves the chaussée and runs NE. over low hills covered with cultivated fields and dotted here and

miles

there with trees. Several large chiftliks are passed, but no villages.

- 8 Track now enters the hills. Villages now begin ; cultivated fields and vineyards, with here and there valonia oaks and small woods of pine. To NW. is an uninterrupted rim of hills, with the villages of Kyrklar and Oremniköi, rising to a plateau about 800 ft. above sea-level. It can be seen stretching far along the slopes. Behind it rises the singular cliff of Yenigüde, and still farther distant is a dark wooded chain of hills 2,000–2,600 ft. high, which stretches from the hills behind Bergama to the col of Örkütler (see mile 25). The bare summit of the Madaras Dagħ can be seen rising above this ridge.

Track winds NE., passing several villages.

10½

**Pasha Koi** on the r.

12

Fine ancient bridge over the **Filia Chai**, a large stream flowing E. **Pasha Luja**, hot spring and baths in the valley to l. ; remains of Roman baths here. About 1 mile E. are the ruins called Eski Bergama on a steep conical hill.

Track bends round to N. by E. up a side-valley, and then over the terrace plateau.

15

**Dere Köi**, alt. 715 ft.

16

Mill in a valley. Cross the stream and ascend along the hill lying between this valley and the next to the E., at an altitude varying from 650 to 1,005 ft. ; many scattered pines and valonia oaks here among cultivated fields.

23

**Örkütler** village (about 7 hrs. from Bergama), alt. 1,305 ft., on the mountain-slope looking W. over the broad hill country of Nevahi Bergama.

Track now bends NE. up a ridge.

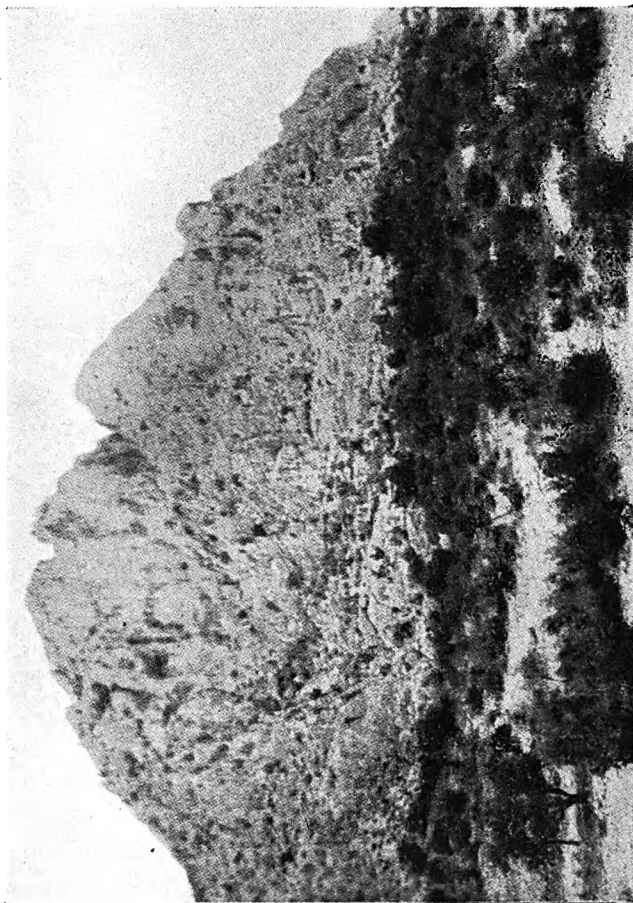
25

Summit, alt. 1,880 ft. To N. is the pine and oak-clad Akmas Dagħ.

26½

Cross the **Kovuk Dere**, ascend over a second ridge

PLATE V



THE CRAG OF YENIGÜDE

(To face p. 224)





miles

covered with oak scrub, and descend to the broad valley of the **Kenik Chai**.

27½ Deserted mine and large building to r. on a high limestone hill.

29½ Spring on r. On the E. side of the valley stretches a range of wooded hills.

32 **Yenije Kõi**, alt. 1,160 ft. A track comes in here from Yokary Beykõi (see Route 34).

35½ **Charkajy** village. Track apparently now follows the **Kenik Chai** ENE.

37 **Kayapa** village. Track bends round to NNE., following the course of the stream.

42½ **Yaghla** village. Track ascends gently out of the valley.

45½ **Ivrindi**, alt. 850 ft.

## ROUTE 38

### BERGAMA—SOMA, 26 miles

This road is a chaussée throughout and is fit for motor traffic. In September 1915 it was stated that all the bridges had been strengthened shortly before that date to allow the passage of guns. The shorter bridges are mostly of stone, the longer of wood. Supplies of wheat, barley, and maize are plentiful, the plain being fertile and cultivated mainly along the S. side, which the road follows. Large herds of cattle are grazed in the plain, and sheep, goats, and camels on the foot-hills. Water is plentiful throughout.

0 **Bergama**, alt. 165 ft. Road runs E.

¾ Cross the **Kestel Chai** by a fine stone bridge.

1½ A track to Balikesr branches to l. (see Route 37). Road continues E. across the plain.

3¼ Bridge over a flood-channel.

5 Road bends S., crossing the **Bakyr Chai** and two

miles

branches of its tributary, the Karadere Su, by stone bridges. (A report of 1914 states that these bridges are of wood.) The main stream here is about 50 paces broad. Alt. 130 ft.

Direction now ESE. towards the hills on the S. side of the plain.

7 $\frac{3}{4}$  **Dondarly** village. **Yaya Kõi**, large village 1 mile S. at the foot of the hills on the l. bank of a tributary.

Direction now generally E.

10 $\frac{1}{2}$  **Poirajyk**, scattered village, partly Turkish, partly Greek.

12 $\frac{1}{2}$  **Kinik**, village about twice the size of Poirajyk, with a total population of about 2,000.

Road bends E. along pine-covered foothills.

13 $\frac{1}{2}$  Cross the **Karadere Su** by a bridge.

A track branches to r. near here over a pass between the round mass of the Enaz Dagħ and the seven-peaked ridge of the Yaila Dagħ (see Route 49).

18 $\frac{1}{2}$  Cross the **Jumaly Dere**. **Jumaly** village 1 mile to r. on the r. bank.

Road ascends over the forehills, which here close in on the plain.

21 **Karakol** to r. . Hill 2 $\frac{1}{2}$  miles N. in a bend of the Akchavlar Chai, a large tributary which joins the Bakyr Chai some distance W. of this point. On the hill are the ruins of Apollonia.

Road takes a more easterly direction.

25 Spring on l. **Pomak Kõi** to r.

26 **Soma**, alt. 635 ft., small town with a population of about 6,000, two-thirds of whom are Moslems. It is the head-quarters of a kaza in the Sarukhan sanjak of the vilayet of Smyrna. With the exception of the main street leading to the bazar the streets are narrow and winding. The railway station lies about 1 $\frac{1}{4}$  mile N. of the town. The chief local products are cereals, tobacco, olives, valonia, and silk.

## ROUTE 39

SOMA—BALIKESR, 45 miles

This is not a made road, but it appears to be in common use, and it is probably fit for carts in dry weather. There is a good deal of cultivation, and plenty of wood for the first half of the journey. The region of the watershed (see mile 24½) is known as Uzunja Yaila, and here the country is still well wooded, but appears to be inhabited mainly by shepherds. Cultivation again becomes more extensive as Balikesr is approached. Water is plentiful throughout.

miles

- |     |  |
|-----|--|
| 0   | <b>Soma</b> , alt. 635 ft. Track runs N.   |
| 1½  | Ford the <b>Bakyr Chai</b> , alt. 340 ft. Soma railway station. Track ascends gently towards a terrace about 200 ft. above the river.  |
| 2½  | Road crosses the railway and a stream and ascends a gradually sloping plateau with cultivated fields, pasture, and scrub.  |
| 4   | Reach the edge of the higher plateau, alt. 785 ft. Track continues now at a height varying from 650 to 850 ft. over easy valleys and ridges, at first through cultivation and then among oak scrub or pines. Many springs are passed, and several villages lie on the mountain-slope to r. |
| 7   | <b>Beije</b> village to r. Road crosses the railway and recrosses twice within the next mile.  |
| 9   | Beije railway station on r.  |
| 13½ | Cross the <b>Yaghjyly Chai</b> , a strong tributary from the E. running to the Gergeren Chai; large mill owned by a Greek on the r. bank.  |
| 16½ | Road crosses the railway ½ mile S. of Kerasun station.   |
| 17  | <b>Kerasun</b> , alt. 895 ft., large Turkish village on an outlier sloping gently W. It is the chief place of  |

miles

a nahie and has a population of about 5,000. Supplies and water are good. One and a half mile E. is a large spring, **Khalka Bunar**, in a large hexagonal space enclosed by walls partly of Roman construction. Behind the spring the mountain is covered with pines and oak scrub, and rises to a ridge about 1,800 ft. high.

18 $\frac{1}{4}$  Spring and Byzantine ruin; cultivated fields.

19 $\frac{1}{2}$  Cross the railway and a stream.

20 $\frac{1}{2}$  Road recrosses the railway. **Karajylar** village; railway loop-siding  $\frac{1}{2}$  mile to l.

21 $\frac{1}{4}$  Railway viaduct over a stream  $\frac{1}{2}$  mile to l.

Road bends E. for a short distance and then turns N. again.

23 Road crosses a stream. The railway crosses by a viaduct about  $\frac{3}{4}$  mile lower down.

24 **Chinarly** village.

24 $\frac{3}{4}$  Road bends W. for about  $\frac{3}{4}$  mile over the watershed between the Gergeren Chai and the Uzunja Dere and then again turns N.

26 $\frac{1}{2}$  Road crosses the railway.

28 The railway is recrossed just S. of **Süyüjak** station.

31 $\frac{1}{4}$  **Kuyu Alan** village on l.

32 $\frac{1}{2}$  Recross the railway near where it passes through 2 tunnels.

33 $\frac{1}{2}$  Cross the **Uzunja Dere** and descend along the l. side of the valley.

35 $\frac{1}{4}$  **Chukur Husein** station on r.

36 **Chukur Husein** village on l. Road recrosses the railway, still following the stream valley.

36 $\frac{1}{2}$  Ascend out of the valley and over a spur.

38 $\frac{1}{2}$  Road crosses 2 streams.

40 $\frac{1}{2}$  Road crosses another 2 streams and rounds a low spur into the plain of Balikesr, again crossing the railway.

45 **Balikesr**, alt. 570 ft.

## ROUTE 40

KERASUN—IVRINDI, about 22 miles

This road runs WNW. from **Kerasun**, crossing the **Tütün Dere** and the **Chatak Dere**, two of the main upper feeders of the Gergeren Chai. Beyond the Chatak Dere the valley of another tributary, the **Kapu Dere**, is entered. As the valley is ascended it becomes fairly narrow. Olive cultivation gives way to scrub. At about 9 miles from Kerasun the track ascends out of the valley over an easy col past the village of **Maden Mezar**. This col forms part of the watershed between the Bakyr Chai system and the Avshar Chai. Beyond Maden Mezar the track apparently descends a tributary of the Kenik Chai to its junction with the main stream, 2–3 miles S. of Yaghla and 16 miles from Kerasun. Here the track from Bergama to Ivrandi is joined (see Route 37, mile 42½).

## ROUTE 41

SOMA—KYRKAGHACH—AK HISSAR, 24 miles

This road is a chaussée throughout. There is no information as to its present condition. Supplies should be plentiful.

miles

- |    |   |
|----|---|
| 0  | <b>Soma</b> , alt. 635 ft. Chaussée runs E. along the foot of the hills.  |
| 3½ | To 1. the railway crosses the Bakyr Chai. Road bends round to S., still skirting the hills.   |
| 6½ | <b>Örchülü</b> village.   |
| 8  | <b>Kyrkaghach</b> , alt. 620 ft. Direction now SE.  |
| 10 | <b>Bakyr</b> , large village of mixed Greek and Turkish population. As the village has given its name to the river it was probably at one time the most important place in the valley. About 1½ mile E. is a low hill |

miles	
	called <b>Mal Tepe</b> , alt. 630 ft., the site of an ancient settlement.
11	A track branches to r., leading over a col 1,390 ft. high W. of Yataghan Tepe to <b>Yaya Kõi</b> and down into the plain of Ak Hissar.
12½	Cross two tributaries from side-valleys to r.
14	Road crosses the railway; <b>Kharta</b> station, alt. 800 ft. Road ascends over a low rise which forms the watershed between the Bakyr Chai and Gördük Chai (Lykos). From the top the road descends a tributary of the Gördük Chai.
16½	A chaussée branches to r. along the foothills to join the chaussée from Manisa to Ak Hissar. Road emerges into the plain and continues SE., crossing a stream.
19	<b>Suleimanly Dag</b> railway station 1 mile to r. beyond the tributary. Stream from NE.
22	Railway-crossing.
22¾	Road crosses the <b>Gördük Chai</b> .
23¼	Recross the railway.
24	<b>Ak Hissar</b> , alt. 360 ft.

## ROUTE 42

## CHANDARLY—DIKELI, 16½ miles

This route is a horse-track throughout. There is a considerable amount of olive cultivation on the hills through which it passes, but apparently cereals are little grown. Large herds of cattle are pastured in the neighbourhood of the Kara Göl (mile 5¾).

A road fit for wheeled traffic runs N. from Chandarly via Demirtash and Hamidie and joins the Dikeli-Bergama chaussée (see Route 35) at the bridge over the Ilgin Chai.

Another road also passable for wheels runs to Chinar Burnu.

miles

0

**Chandarly**, small town, with a population of about 1,000, picturesquely situated on a small peninsula between two bays, the eastern of which forms the harbour. On the sandy neck which joins the promontory to the mainland lies the Christian quarter. South of it is the Turkish quarter, built round a well-preserved late mediaeval castle. The population are engaged mainly in fishing, the production of sea-salt, and the export of valonia and other products from the country round about.

In spite of the superiority of its harbour Chandarly as a port for the produce of the Kaikos valley is neglected in favour of Dikeli, which has closer and better communication with Bergama.

Track winds NW. up the hills; the slopes are covered with olive cultivation and broken by many ravines.

4½

**Naralan Yaila** in a depression in the hills.

5½

Two small lakes to l. (dry in autumn).

5¾

**Kara Göl** lake to r., alt. 1,310 ft. Its western and northern portion is shallow. To N., E., and S. it is surrounded by steep rocky walls. On the W. is a low wall, rising little above the water-level and broken at one point almost down to it. On the l. this western wall falls steeply to a deep valley running SW. to the shore, and a short distance below it are some springs. These apparently drain from the lake, which has no outlet above ground. The springs water some gardens. Large herds of cattle and goats are to be seen near the lake.

Track continues NW., crossing the deep valley mentioned above.

7½

**Hassan Köi**, alt. 1,505 ft.

11½

**Ajanos**, large Greek village in a small plain at the foot of the mountain. To l. is a small bay which might form a good harbour. It is little used at



miles

present. West of the plain is a ridge, alt. about 400 ft., forming a promontory with the ruins of Kanai at its northern end. The eastern slopes of the ridge are covered with maquis.

Track now runs NE. across the plain and then along the foothills near the shore; olives and maquis on the slopes.

16½

**Dikeli.**

## ROUTE 43

## FOCHATYN—ALIAGA, 19 miles

This route is apparently unmetalled except for the last 3½ miles. It is, however, passable for wheels from mile 7½.

Supplies of cereals are scanty. There is a certain amount of timber on the hills through which the route passes.

0 **Fochatyn** (Eskije Focha; Gk. Palaees Phokes, anc. Phokaia). Track runs NE. up a small valley.

2 Col, alt. 610 ft.

3½ Second col, alt. 865 ft. Track descends E. towards a broad valley depression. There is little cultivation in the valley.

4¾ Track turns N. at the E. side of the valley plain and begins to wind up the hills through dreary shrub vegetation; pine forest on the mountain to l.

6¼ Col, alt. 675 ft.

7½ **Yenije Focha** (Gk. Nees Phokes), unimportant place in a small plain among gardens and olive groves; fine bay.

Track now follows the general line of the coast. It runs at first NE. between two terraced hills; easy slopes with fine olive-trees and country-houses.

8¾ Direction changes to SE.

10½ Track now runs across a broad valley. **Kössebegli**, large village on the western valley-slope 1 mile to S.

miles

- Direction changes to ENE. over low undulations with cereal cultivation.
- 13½ Enter a broad valley, which slopes gradually down from the Menemen plain to the Bay of Namurt Liman. The shore of the bay is about ½ mile to l. ; low broad hills in the plain with the ruins of the ancient city of Kyme, close to the modern Namurt Chiftlik.
- 15 Cross a stream (the ancient Xanthos) by a bridge.
- 15½ Track joins the chaussée from Menemen to Bergama (see Route 44).
- Direction now N. by E. through pasture-land over the foothills of the Dumanly Dag.
- 19 **Aliaga**, village in a small plain a few hundred feet above the beach, on which there is a quay. The most of the land in the neighbourhood belonged in 1901 to a Greek, M. Baltatzis.

## ROUTE 44

SMYRNA—MENEMEN—BERGAMA, 66 miles

This road was reported in 1914 to be only partly metalled. It seems to have been remade during 1915. It is probable that it is now a chaussée throughout, but few details of it are available. It should present no difficulties, at least in dry weather. Reports of 1915 stated that bridges along the route had been repaired and strengthened. The **Gediz Chai** is crossed about 4 miles NW. of Menemen by a ferry, which is capable of taking two carriages and four horses at a time. The river at this point has a fairly strong current. The depth in September is 2–3 ft., and the breadth 120 paces. The bridge which used to carry the road over the **Bakyr Chai** about 5½ miles from Bergama was washed away in 1914, but has probably been repaired.

## ROUTE 45

## MENEMEN—FOCHATYN, 24 miles

Before the war there was no made road from Menemen W. to the coast at Haji Liman. It is said that there has been one repaired to make it practicable for heavy guns, but there is no evidence to show whether it follows the line of the one here detailed.

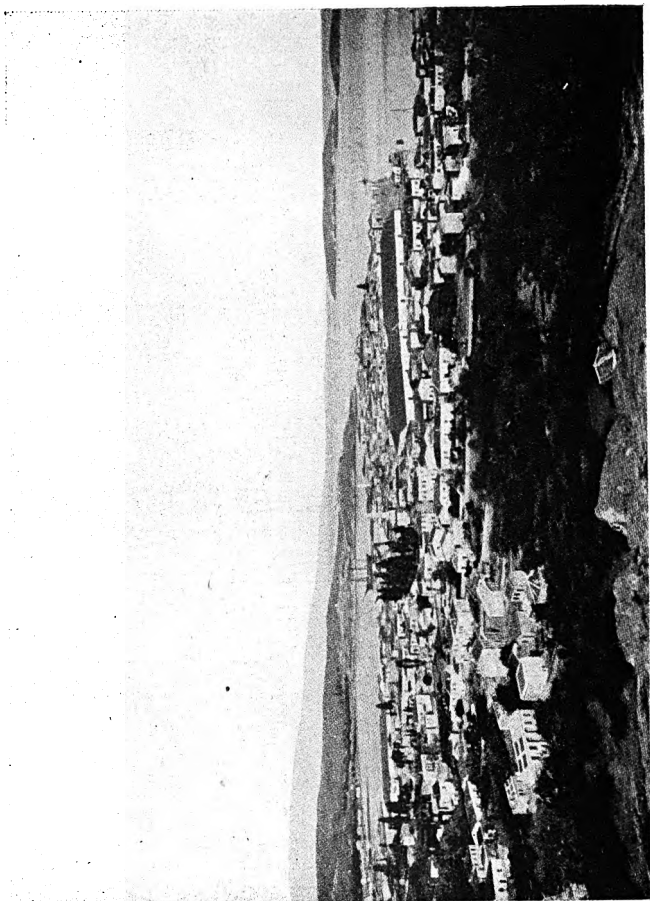
Small quantities of supplies should be obtainable throughout.

miles

- |     |  |
|-----|--|
| 0   | <b>Menemen</b> , alt. 65 ft. Road runs NW. across the plain. The soil here is sandy and cultivated with barley, maize, and vegetables; some scattered trees. |
| 2½  | Cross an old arm of the <b>Gediz Chai</b> , the waters of which in 1886 were diverted to the present channel more to the N.; considerable dunes here.        |
| 3¾  | Cross a second old branch of the river. Road now runs WSW. along the straight dike which keeps the river to its present westerly course.                     |
| 8¾  | Reach the foot of a low isolated group of hills, formerly an island, on the l. <b>Panisa</b> village 1 mile SE.  |
|     | Direction changes to NW.   |
| 11¼ | Cross the <b>Gediz Chai</b> by a ferry. Direction now N.   |
| 12½ | <b>Gören</b> , Greek village on a spur. Direction changes to NW. across the plain.   |
| 14½ | Road now skirts the hills and runs W. by S. The plain becomes narrower; numerous houses among vineyards and cultivated fields.                               |
| 16½ | <b>Balaras</b> village, a few houses. Road begins to ascend, leaving the alluvial plain.   |
| 18½ | Rock tomb on l. hewn out of an isolated rock. Road rises to 270 ft. over a low col, beyond which is a fertile valley running down to the Bay of Haji         |



PLATE VI



FOCHATYN

(To face p. 235)

miles

Liman. A chaussée which is now joined runs between this bay and Fochatyn, and about here a fairly good road comes in on the l. from Cape Panagia.

Direction NW.

22½

Summit, alt. 445 ft. ; fine view forward.

24

**Fochatyn.**

## ROUTE 46

### MENEMEN—MANISA—AK HISSAR, 53 miles

There is no detailed description of this road available. It is a chaussée throughout and should present no difficulties except in wet weather.

The distance from Menemen to Manisa is about 20 miles.

## ROUTE 47

### MANISA—BERGAMA

*Via ORTÜLÜ, 47 miles*

The route of which a few details are given here is the shortest between Manisa and Bergama. It does not appear to be difficult, but is probably fit only for pack-transport.

Most of the villages touched are small. There is no information as to supplies for the first half of the route ; from Sakally (mile 23½) moderate quantities should be procurable.

- |     |  |
|-----|--|
| 0   | <b>Manisa</b> , alt. 230 ft. Route follows the Ak Hissar chaussée N. across the Gediz Chai.            |
| 3   | The chaussée bends NE., while the present route continues N. across the plain.                         |
| 7   | Begin to ascend the foothills up the E. side of a stream valley.                                       |
| 10½ | <b>Salykly</b> village. Sarma, Yürük village to E. Here the track apparently forks. The l.-hand branch |

miles

runs via Kale Köi and coincides with Route 50 as far as Daudlar ; the r.-hand branch crosses Route 50 about  $1\frac{1}{2}$  mile E. of Kale Köi. The two tracks unite again at Pürpejiler, the distance in each case being about the same.

21      **Pürpejiler** village to l. Direction now NW. across stream valleys.

23 $\frac{1}{2}$       **Sakally**, Yürük village, alt. 1,630 ft.

A track comes in here on the r. from Kinik (see Route 49, mile 4).

Track runs N. across stream valleys past **Rejebli** and **Bostanlyk**. Long flat hills rising here and there in knolls and covered with undergrowth, chiefly oak and juniper scrub.

28      Col and watershed, alt. 2,135 ft.

Track descends N. down the **Kyrk Gechit** valley.

28 $\frac{1}{2}$       **Örtülü**, alt. 1,825 ft., large double village on easy slopes covered with vines, figs, and chestnuts ; lower down the valley-sides are steeper and covered with pines.

31 $\frac{1}{2}$       Bridge over a tributary of the Kyrk Gechit Dere. Track continues down the E. side of the main valley.

34 $\frac{1}{2}$       Cross to l. bank of river and follow it downstream.

37      Here the valley suddenly widens, and the track crosses and shortly after recrosses the stream.

37 $\frac{1}{2}$       Valley again narrows, the stream breaking through a rocky gate called **Kapu Kaya** formed by a ridge of dark limestone.

38      The valley widens into the plain.

38 $\frac{1}{2}$       **Yaya Köi** at the foot of the hills ; population largely Circassian.

From here there are several tracks to Bergama, either along the edge of the plain or across the Kyrk Gechit Dere to join the chaussée (Route 38) about Dondarly.

47      **Bergama**, alt. 165 ft.

## ROUTE 48

## BERGAMA—MANISA

*Via KÖSSELER, 44½ miles*

This route appears to have been of some importance in ancient times, and traces of ancient paving are still to be seen. It is at present a difficult horse-track.

The villages passed on the way over the hills are nearly all small, and few supplies can be looked for. Water also appears to be scarce over parts of the route, especially between mile 7 and mile 11. There is a certain amount of scattered timber and the usual dry scrub.

For the first few miles there are several alternative tracks. One of these runs SSE. via Burkhan village, and joins the route detailed below some distance before Maruflar (mile 7½). Another keeps more to the E. and ascends the Gümüş Ova valley, joining the route detailed at Maruflar. A third also comes in at Maruflar. This track runs via the valley of the Sinir Dere, which enters the Bakyr Chai SSW. of Bergama.

miles

- |     |   |
|-----|---|
| 0   | <b>Bergama</b> , alt. 165 ft. Track runs across the plain (apparently in a SE direction to cross the Bakyr Chai by a bridge). After crossing the river it ascends the foothills.  |
| 4   | <b>Harmanlar</b> , alt. 525 ft. ; fine view N. to Bergama and the Kosak hills.  |
| 7½  | <b>Maruflar</b> , alt. 860 ft. Track ascends gradually ; round stones make the going difficult. Scanty scrub at first and fine watered gardens down to l. in the Gümüş Ova valley. Farther on there are scattered valonias, and the country becomes waterless and monotonous. The track ascends up a well-marked step on to a higher plateau. |
| 11½ | <b>Dagh Balabanly</b> , small village on the plateau.   |



miles

Track crosses a small valley ; water-mill beside a spring high on the slope to l.

12½ Cross a saddle, alt. 1,650 ft.

**Ismailer**, small village at the head of a valley, which the track apparently follows S. ; to E. is the upland valley plain of Bairamjylar with vine cultivation, S. of which rises a conical peak called Kaplan Dag.

19½ **Kösseler** village, alt. 760 ft. The valley narrows to a gorge, down which the stream runs to join the Koja Chai. In the angle at the junction rises a steep hill, on which are the ruins of the ancient city of Aigai, now called Nimrud Kalesi. The summit is 1,260 ft. high, and the hill was evidently of considerable strategic importance in ancient times. It commands a wide view over the whole region lying between the Yünd Dag and the Dumanly Dag.

Track turns E. over a ridge and ascends the Koja Chai valley for some distance. It then crosses the river and runs SE.

25½ **Belen Köi**. Direction becomes southerly, over gentle undulations thickly covered with stones and broken by small knolls ; scanty oak scrub and small pines, with here and there valonias.

27½ **Chamja** village to l. Alt. here 1,230 ft. Descent becomes steeper.

30½ Well of good water. Track runs here over a wooded terrace past a Yürük village and then down into the valley on the l. The hills become lower ; camels may be seen grazing among the scrub.

33½ **Cherkes Köi**.

33½ Cross the broad **Chakal Dere**.

35 **Churlu**, Greek village on a low spur projecting into the plain.

36½ Rope ferry across the **Gediz Chai**. The river here is about 230 ft. wide.

miles

37 $\frac{1}{4}$ 

**Hamidie**, alt. 90 ft., large prosperous village among vineyards and gardens irrigated from wells. The population is composed entirely of Greeks who speak only Turkish. Railway station to S.

Track runs ESE. through vineyards.

44 $\frac{1}{2}$ 

**Manisa**, alt. 230 ft.

## ROUTE 49

KINIK—PALAMUT, 26 miles.

This is a pack-track, difficult and little used now as it has been superseded by the chaussée via Soma and Kyrkaghach. It seems to have had considerable importance in early times, being probably the route followed by part of the ancient road from Pergamum to Sardis.

Except perhaps about the middle stage, supplies should be fairly plentiful. There is a certain amount of pine forest on the hills.

0

**Kinik**. Track at first follows Route 38.

2 $\frac{1}{2}$ 

**Khojaomar** village. Track bends to r. up the valley of the **Karadere Su**. The stream is perennial and drives mills. To l. in the plain beyond it is an isolated hill, probably the site of an ancient settlement. The valley is at first broad and fertile.

4

**Kyzyl Assar**, volcanic peak with terraced summit on r., alt. about 650 ft. A second higher peak rises some distance to W.

A track continues S. up the W. side of the valley and over the hills past **Mamurt Kale**, where there are the ruins of an ancient temple, to **Sakally** (see Route 47, mile 23 $\frac{1}{2}$ ).

Present track crosses the stream and keeps up the E. side of the valley.

miles

- 4½      A large valley from the W. enters the main valley, which now narrows.
- 6      Track turns E. up the slope.
- 7½      **Kalem Köi**, alt. 1,480 ft., on a terrace surrounded by undulating hill country.
- 8½      Col, alt. 2,025 ft., between a ridge on the N. and the Yaila Dagħ, a long mountain-wall about 3,000 ft. high running SW.
- 10      Track bends SE. along easy slopes.
- 10      Watershed, alt. 2,230 ft. Track descends a stream valley SE. The stream is one of the main feeders of the western branch of the Palamut Chai. It is often dry in summer.
- 11½      **Ada Tepe**, peak about 2,300 ft. high on the W. side of the valley; some valonias in this neighbourhood.
- 18      **Suleiman Köi**, alt. 790 ft. Here the valley widens; low hills to l. broken by broad valleys; fertile fields in the valley plains, olive and fruit cultivation on the hills and oak scrub higher up; pines here and there on the mountain-slopes. The large village of Sindeli lies about 3 miles SE.
- 21½      **Erdiler** village, alt. 550 ft.
- 24      Cross a tributary. On a hill on the l. bank are the remains of the ancient city of Apollonis. Immediately S. of the hill is a strong spring, whose overflow forms the eastern branch of the Palamut Chai. This branch carries water in summer.
- 26      **Palamut Chiftlik**, alt. 315 ft.

## ROUTE 50

## PALAMUT—ALIAGA, 50 miles

The country traversed by the first part of this route is easy and fairly well cultivated. After about 20 miles it enters rougher hill country with fewer villages. The line here

followed seems to be for about 8 miles that of an ancient road from Sardis to Aigai. Part of the paving along this stage is still wonderfully well preserved, but it is not stated whether the road is still fit for wheels.

Supplies should be fairly plentiful along the first 20 miles and again from mile 39. Most of the villages, however, are small.

Pasture seems to be fairly good generally, and there is a certain amount of scrub for fuel, but apparently little timber.

miles

- |     |   |
|-----|---|
| 0   | <b>Palamut</b> , alt. 315 ft. Track runs W. across the plain and ascends gently over fertile hills covered with olive, cereal, and opium cultivation.   |
| 3½  | <b>Gientze Kõi</b> , alt. 650 ft., prosperous village inhabited mainly by Greeks. It lies at the foot of a mountain called Kara Dagh, which has a height of over 2,000 ft. Track runs S. along the foot of the mountain; alternate wheat-fields and oak scrub.  |
| 6   | Track bends SW., alt. 720 ft.   |
| 8¼  | <b>Distepe</b> , Yürük village, alt. 640 ft. Track continues over low hills, which sink gradually down to the Hermos plain. Some fairly large valleys come down from the N.   |
| 12½ | <b>Sarycham</b> , alt. 350 ft., large village near the mouth of a valley; in the plain on the other side of the valley is a hill with ancient ruins. Track now runs across the level through cultivation interspersed with fine pistachios. After some distance it begins to wind up and down over spurs. |
| 18  | <b>Yenije</b> village, alt. 355 ft.; hill and ruins to l.   |
| 19½ | <b>Karaselin</b> , Yürük village. The country now suddenly becomes rugged. Track turns NW.  |
| 20½ | About here the track crosses a path from Manisa to Bergama (see Route 47, mile 10½).  |
| 22  | <b>Kale Kõi</b> (or Dayuruk) above a gorge, down which  |

miles

comes a strong stream; many vultures or eagles may be seen on the cliffs. **Sarma**, a small Yürük village, lies at a height of 550 ft. on a terrace to S. on the other side of the stream.

Track continues NW. on the E. side of the ravine, following the line of a remarkably well-preserved ancient paved road, probably part of a road from Sardis to Aigai; some oak scrub and valonias along the track. To r. is a line of high peaks, and farther N. the jagged precipice of Urpekkaya is visible.

- 25     **Daudlar**, alt. 1,100 ft. Here the valley widens. A track to Bergama continues N. (see Route 47, mile 10½).

Present route fords the stream and ascends W. up an easy stony depression.

- 26½     Summit, alt. 1,340 ft. Track crosses the upland plain of Kuyak. This plateau has no outlet for drainage and has fine pasture. There is an ancient cistern here. On the far side is another plateau, somewhat higher, and well cultivated.

- 30     **Belen** village on this second plateau. For the next 6 miles the track coincides with that from Bergama to Manisa (see Route 48, miles 25½–19½).

- 36     **Kösseler**. About here a fairly easy track branches to r. up the valley of the **Ovajyk Dere**, leaving the village of **Dere Köi** to r. and running via **Okuz Köi** and **Kilisise Köi** to join the Smyrna–Bergama chaussée.

Present route turns W.

- 38     **Haji Mukharly**, alt. 1,160 ft. Here the plateau falls in a step running from N. to S. down to low hill country (general level about 650 ft.), which stretches right to the coast.

In front is the broad valley of the **Konduz Chai**. To NE. is undulating hill country, bare except for dry shrub vegetation.

- 41     **Kalabak** village, alt. 590 ft.

miles

A track here branches to l., running via **Kadynjyk** to join the Smyrna-Bergama chaussée.

44 Direction now SW. down the Konduz Chai. The valley soon becomes marshy; many herds of cattle in the plain. The arches of a large Roman aqueduct are visible rising above the marsh.

46½ Cross the **Koja Chai** and ascend over broad flat undulating hills, bare except for sheep pasture.

50 **Aliaga.**

## ROUTE 51

### PANDERMA—KIRMASTI

*Via MIKHALIJ, 41 miles*

This road appears to be at present in bad repair. It was reported in 1915 to be largely metalled, with good surface and fit for motor traffic. The bridges were said to be good, mostly new and capable of taking two fully laden bullock-carts simultaneously. The dimensions noted in the text are to be regarded as merely approximate. Where there are fords the bottom is reported sand or sand with shallow mud. Where the road lies over plain it is very difficult in wet weather.

Supplies are generally plentiful. The inhabitants of the district traversed are mostly yeomen, the majority of whom have pack-horses. Even the poorest own a yoke of oxen. Water is abundant everywhere except near Panderma. There are wells at all the villages which are not actually on streams. Wood for fuel or other purposes is scanty in the plain, and most of it is brought from the Kapu Dagħ (Cyzicus) peninsula or the slopes of the Kara Dagħ to E. of Panderma.

0 **Panderma.** For the first 7½ miles see Route 23.

7½ The present route here branches ESE. from the Panderma-Susurlu chaussée.

10½ **Chaush village.**

miles

- 12 Single-span iron bridge, about 27 ft. long, 17 ft. wide, and 10–12 ft. above water-level, over a tributary of the Karadere. The stream is easily fordable.  
About here an alternative track comes in on the l. from Panderma (see Route 52 in the reverse order, miles  $26\frac{1}{2}$ – $14\frac{1}{2}$ ).
- 13½ Kahve. Not far from here a dry-weather track branches to r. (see Route 52, mile  $12\frac{1}{2}$ ).
- 14 **Kady Köi**, Turkish village  $\frac{3}{4}$  mile to l. Iron bridge, similar to the last, over a stream in a gully often dry in summer.
- 15½ **Arys Köi**, Turkish village to l. Iron bridge, similar to the last two, over a stream often dry in summer.  
The Karadere here approaches the road, which continues E. between the river and the foot of the hills.
- 17½ **Hojet Bunar**, Muhajir village to l. Wooden bridge about the same length as the last three, but rather narrower, over a gully; 2 wooden piers; stream nearly dry in summer.
- 18½ **Kyzyljyk**, Turkish village.
- 20½ Iron bridge, similar to those already mentioned, over a stream in a gully.
- 21 **Shahyn Köi**, Turkish village.
- 22 **Kara Köi**. Cross the **Karadere** by a good wooden bridge of 8 arches, about 130 ft. long, 20 ft. wide. The piers are of wood, and the height above the water is over 25 ft.
- 25½ Wooden bridge over the **Susurlu Chai**, which at this point is also called **Hanifa Dere**; this bridge is of about the same dimensions as the last, but has only 6 or 7 arches, and is not more than 20 ft. above the river; the ground is level at both ends of the bridge.
- 26½ **Mikhalij** on an isolated group of hills about 130 ft. high.
- 27½ **Jambaly** bridge (wooden) over a stream; length

miles

about 130 ft. ; breadth sufficient to allow two carriages to pass abreast ; 10–12 arches ; height above water about 25 ft. ; ground soft at either end of the bridge.

29½ Chaussée to Brussa branches to l. (see Route 55).

Near here is **Kunaly** bridge (iron), over a flood-channel. It is of about the same dimensions as those mentioned under miles 12, 14, &c.

The road continues SSE. over flat country, marshy in places. The T. L. crosses and recrosses the road several times ; fine wheat-fields here and there in the plain.

33 Low hills, about 250 ft. high, begin on the r. ; fine grazing.

35 The road now begins to rise over the hills.

37 Large marsh on the l.

37½ The alternative route via Sarybey comes in on the r. (see Route 53, mile 32).

38 **Melde** ruins, believed by some authorities to be the site of the ancient Miletoupolis.

The road now skirts low hills on the r. ; to l. marshy ground, giving pasture to herds of cattle. Farther on are gardens with mulberry and onion cultivation.

41 **Kirmasti**, alt. 110 ft.

## ROUTE 52

MIKHALIJ—PANDERMA, 26½ miles

The route here detailed is an alternative to that described (in the reverse direction) in the first 26½ miles of Route 51. It is passable for arabas in dry weather.

Supplies are scanty, most of the plain country traversed being under pasture, the grass of which is parched by the



month of August. From about mile  $14\frac{1}{2}$  the track runs over undulating country, crossing low hills mostly bare except for brushwood. Water appears to be fairly plentiful even in late summer.

miles

- |                 |   |
|-----------------|---|
| 0               | <b>Mikhalij.</b> Route at first follows the chaussée (see Route 51).  |
| 1               | Wooden bridge over the <b>Susurlu Chai</b> . Track branches to l. from the chaussée, at first through cultivation ; some trees.   |
| 2               | <b>Shahyn Kõi</b> 1 mile to r.  |
| 3               | <b>Butanys</b> village $\frac{1}{4}$ mile to l.   |
| 5               | Track skirts a bend of the <b>Karadere</b> and passes <b>Haji Balat Chiftlik</b> , an isolated farm. Cultivation has now given place to pasture, which, however, is burnt up in summer. |
| $7\frac{1}{2}$  | <b>Yeni Kõi</b> on the hill to r., N. of the river.   |
| 9               | Spring near a chiftlik and an old cemetery.   |
| $9\frac{1}{2}$  | Ford the <b>Karadere</b> .  |
| 10              | <b>Top Hissar</b> $\frac{1}{2}$ mile to l., at the foot of a rocky hill, on which are the ruins of a mediaeval fort.<br>Ground here marshy.   |
| $11\frac{1}{2}$ | <b>Kady Kõi</b> $1\frac{1}{2}$ mile to r., N. of the chaussée.  |
| $12\frac{1}{2}$ | Track joins the chaussée near a kahve (see Route 51, mile $13\frac{1}{2}$ ). The plain now comes to an end. Short ascent to a hill-top, and then gradual descent.                       |
| 14              | Cemetery by the roadside.   |
| $14\frac{1}{2}$ | Track branches to r. from the chaussée.   |
| $15\frac{1}{4}$ | <b>Yenije Kõi</b> , poverty-stricken Rumelian village.  |
| 16              | Descend into a stream valley.   |
| $16\frac{1}{2}$ | Cross the stream and ascend the western slope.  |
| 17              | Summit ; view of the <b>Manyas Göl</b> to l.  |
| 18              | <b>Takhteladobasy</b> village.  |
| $19\frac{1}{2}$ | Cross a small stream at the bottom of a valley.<br><b>At Bir</b> , Circassian village $\frac{1}{4}$ mile to r.  |
| $20\frac{1}{2}$ | <b>Seraklu</b> village on the edge of a rise.   |
| $22\frac{1}{2}$ | <b>Omarkõi</b> at the foot of a hill.   |

miles

Ford a small stream. Track now begins to cross an upland plateau.

24 Highest point of plateau.

25 **Kayajyk** village  $\frac{2}{3}$  mile to r., at the foot of some rocks.

25 $\frac{1}{2}$  Reach the edge of the plateau and come into view of the sea.

26 $\frac{1}{2}$  **Panderma.**

## ROUTE 53

### PANDERMA—KIRMASTI

*Via SARYBEY, 35 $\frac{1}{2}$  miles*

This route passes through open and generally well-cultivated country. The plain is heavy going after rain and impassable for wheels in winter, but dry and easy in summer. The fords are easy and shallow, and the bottoms are reported to be sandy.

Supplies are similar to those noted for Route 51.

0. **Panderma.** The route follows the Susurlu chaussée (see Route 23) apparently to Sygyrjyk (10 $\frac{1}{4}$  miles). The exact point at which it branches E. is not noted in any of the reports available.

15 $\frac{1}{2}$  Ford (knee-deep in summer) over the **Karadere.**

16 $\frac{1}{4}$  **Karayani**, Muhajir village.

21 $\frac{3}{4}$  **Sarybey** village partly on the l. and partly on the r. bank of the **Susurlu Chai.**

**Marianos Chiftlik**, large farm to SW. Ford across the river.

24 $\frac{3}{4}$  **Gönü**, Turkish village.

27 $\frac{3}{4}$  **Gerdeme**, Turkish village. Ascend over low hills; fine grazing.

31 $\frac{1}{4}$  **Hamnamly Chiftlik.**

32 The track now joins the chaussée (see Route 51, mile 37 $\frac{1}{2}$ ).

35 $\frac{1}{2}$  **Kirmasti.**

## ROUTE 54

## SUSURLU—KIRMASTI, 18 miles

This is an unmetalled road passable for arabas in dry weather.

Supplies in small quantities should be obtainable throughout.

A post-road has been constructed during the last 15 years. It follows the l. bank of the river downstream for about  $2\frac{1}{2}$  miles and then crosses by a bridge. There is no evidence to show whether this road joins the track outlined in the itinerary.

miles	
0	<b>Susurlu</b> , alt. 275 ft. Track fords the river and runs along the level between it and the hills, gradually approaching the latter.
6	<b>Tash Köprü</b> . Track bends round towards the E., passing <b>Ada Köi</b> $\frac{1}{2}$ mile to l. It then ascends a low ridge.
9	Summit of ridge ; wide view towards Kirmasti.
10	Descend slightly, passing <b>Mezarlyk Köi</b> $\frac{1}{2}$ mile to r.
10 $\frac{1}{2}$	Cross another low ridge, on which is a cemetery. Track now runs across flat country, leaving <b>Gölje</b> to l.
18	<b>Kirmasti</b> , alt. 110 ft.

## ROUTE 55

MIKHALIJ—BRUSSA, 43 $\frac{1}{2}$  miles

In 1914 this road was excellent as far as Ulubad (mile 7 $\frac{1}{2}$ ). The surface was said to be very bad between Bash Köi (mile 24 $\frac{1}{2}$ ) and Hassanlar Dere (mile 29) and on the descent at mile 33. The T. L. follows the route nearly all the way.

The Mikhalij plain is an almost impassable morass in wet weather. Between Mikhalij and Ulubad an unmetalled track, 3 miles shorter than the chaussée, may be taken in summer.

It runs SE. to a sluggish backwater which joins the Susurlu Chai and the Ulubad Chai, and following it for some distance crosses the water by a wooden bridge. From here this track runs E. over alluvium, first through pasture and then through wheat-fields to Ulubad.

Supplies are plentiful to Ulubad. Between Ulubad and Ekizje (mile  $20\frac{1}{2}$ ) the country is sparsely inhabited and supplies consequently scanty, except for the waterfowl and fish of the lake. Beyond Ekizje there are fair stocks of cereals and large quantities of mulberries, olives, and fruit. Live-stock is plentiful throughout.

Fuel and timber are generally scarce from Ulubad to Brussa. In the plain beyond the Abulliond Lake, however, there are a fair number of scattered oaks. Water is to be found everywhere on or near the route except in summer from about mile  $24\frac{1}{2}$  to Brussa.

Along the lake troops may camp nearly anywhere, but malaria is rife here.

miles

0      **Mikhalij**, alt. 130 ft. For the first  $2\frac{3}{4}$  miles see Route 51, miles  $26\frac{1}{2}$ – $29\frac{1}{4}$ .

$2\frac{3}{4}$       Here the present route branches E. across the plain.

$5\frac{1}{4}$       Direction changes to NE.

$7\frac{1}{4}$       The alternative route from Mikhalij (see introduction) comes in on the l.

$17\frac{1}{2}$       **Ulubad**, unimportant modern village on the side of the mediaeval fortress of Lopadion. A large part of the fortress wall is still preserved, and the older village lies inside it. Since the war of 1878 a large Circassian suburb has grown up outside. The river-bank below the wall is about 50 ft. high.

Cross the Ulubad river by a wooden bridge about 400 ft. long. The bridge rests on wooden piers and has about 30 arches. About 30 ft. in the middle is built on pontoons, which can be swung to allow river craft to pass. (Another account says that the centre part is made to run to and fro on rails.) The river here is

miles

deep and muddy. About 200 yds, upstream are the piers of an ancient stone bridge. The distance to the marshy edge of the lake is about 1,000 yds.

The road now runs NE. over flat alluvium.

9½

Spring on l. of road, which now bends E.

10½

**Issiz Khan.** The khan is massively built in the old Turkish style, rather like a robber fortress. Large flocks of sheep are often herded here, and there is room for over 500 horses.

The road continues E. across level country. On the l. the hills rise gently and present no striking features. Their southern slopes are bare, and in summer are burnt to a dusty drab colour. There is no shade, and the only verdure (in August) is the belt of turf between the winter and summer levels of the water. The lake on the r. teems with waterfowl, ducks, herons, curlews, geese, &c., and the bushes are full of pigeons and magpies.

11½

A cart-track to Mudania branches to l.

14

The country now begins to rise in low undulations, and there is a fair amount of cultivation. A good deal of flax is grown here.

18½

Wooden bridge over a tributary of the lake; the stream is said to be fordable (about thigh-deep).

19½

A cart-track branches to r. to the important fishing village of Karaaghach. On the r. the lake is now dotted with rugged islands, the larger of which support a growth of stunted pines.

20½

**Ekizje** (or Aniatos), Greek village; good water; wheat and barley cultivation.

22

**Chatal Aghyl** (or Constantinitzi), Greek village, and large khan on high ground; stabling for 250-300 animals.

A cart-track here branches S. to Abulliond (Apollonia), a Greek village of about 500 houses, 3½ miles distant on an island in the NE. end of the lake.

miles

22½

**Karaja Ova**, Greek village. The road continues over low ridges and across stream valleys.

24½

**Bash Kõi**, Greek village on r. in a small valley running SW. to the plain. The lake now disappears from view. The road continues through well-cultivated hills.

28

**Soluklu Cheshme**, alt. 370 ft., khan with good spring at which horses are usually watered; stabling for 50 or 60 animals.

Steep descent for ½ mile. Road reported in bad order in 1914.

29

Wooden bridge used in winter over the **Hassanlar Dere**. The stream is nearly or quite dry in summer.

The road ascends steeply out of the stream valley on to a plateau (? **Koruklu Bayr**) about 450 ft. high. Going bad in 1914.

33

Descend steeply to the **Kiti** plain, about 200 ft. below the plateau. Road reported in bad order in 1914. The ground in the plain is dark brown. To r. are villages and fields, with scattered trees, while farther S. the hills rise steeply to about 1,000 ft., forming an undulating terrace, behind which there is a further rise to about 2,300 ft. The slopes are broken by several valleys with streams, whose waters appear to lose themselves in the plain. To l. is pasture-land.

38

**Besh Evler**, Muhajir village.

38½

The **Brussa-Mudania** railway crosses the road.

39

A track from **Kirmasti** along the S. shore of the lake comes in on the r. (see Route 56, mile 36).

Road recrosses the railway, alt. 480 ft., and descends gently through cultivated fields.

40

Cross the **Ulfer Chai** by a long stone bridge, alt. 370 ft., and continue over cultivated plain, between orchards and gardens.

41

The chaussée from **Mudania** comes in on the l. (see Route 62, mile 15½). **Chekirje** village ¾ mile S.

43½

**Brussa**, alt. 590 ft.

## ROUTE 56

## KIRMASTI—BRUSSA, 40½ miles

This is a cart-track, impassable in winter. None of the numerous streams which have to be crossed are bridged. They are easily fordable in summer but often impassable during floods. Along the lake the going is very bad after rain, and the stage between Ayas Köi (mile 6) and Akcheler (mile 22½), according to one account, is always impracticable for wheels.

Supplies in fair quantity may be had, especially near Kirmasti, but fuel and timber are said to be scarce except near Kirmasti and Brussa. One account, however, speaks of the hills on the S. of the track as well wooded. There is plenty of water near the road almost everywhere.

miles

- |     |   |
|-----|---|
| 0   | <b>Kirmasti</b> , alt. 110 ft. Track runs over cultivated plain NE.   |
| 2   | <b>Aralyk</b> , Muhajir village.  |
| 3¼  | Ascend over a projecting spur.  |
| 4½  | <b>Alasei Köi</b> .   |
| 6   | <b>Ayas Köi</b> , Turkish and Circassian village.   |
| 8½  | Reach the S. shore of the <b>Abulliond Göl</b> . Direction now ENE. between the lake and the hills, which rise steeply on the r. close to the water's edge. The road could be easily blocked, and is probably difficult to pass when the water is high. Figs, vines, bays, and clematis along the road; trees and grass on the hill-slopes; reeds and swamp along the shore to l. |
| 12  | <b>Derbend Karakol</b> , police station on a bluff above the lake. Several small streams from the r. are crossed during the next few miles.   |
| 14½ | <b>Onaj</b> , Turkish village.  |
| 16  | <b>Akche Bunar</b> village; mill and grain-store beside the lake; ground swampy.  |

miles

- 20 **Fadyly**, Turkish village about  $\frac{1}{2}$  mile to r., up a stream. Track now runs through plain at the E. end of the lake.
- 22 $\frac{1}{2}$  **Akcheler**, large Turkish and Muhajir village. Direction now E. over low undulations.
- 25 $\frac{1}{2}$  **Hassanlar** village, alt. 345 ft., at the mouth of a valley  $\frac{1}{4}$  mile to r. Springs near here; mulberry cultivation below the village.
- 27 Ascend over a low ridge into the **Kiti** plain; elms, oaks, and willows along the track, which skirts the foot of the hills on the r.; mulberry and vine cultivation in the plain.
- 28 $\frac{1}{4}$  **Kayapa** village on the hill  $\frac{1}{2}$  mile to r.
- 30 $\frac{1}{4}$  **Takhtaly** village at the foot of a hill; inhabitants mainly Greeks.  
Track now runs ENE. across the plain, crossing one or two small streams; olive and mulberry cultivation.
- 33 $\frac{1}{2}$  Ascend over a ridge.
- 36 Track joins the chaussée from **Mikhaliij** (see Route 55, mile 39).
- 40 $\frac{1}{2}$  **Brussa**, alt. 590 ft.

## ROUTE 57

## KIRMASTI—BEYJE, 46 miles

This is a pack-route except for the last 3 miles.

Supplies are practically unobtainable from **Kestelek** (mile 12) to about mile 43. Water is plentiful throughout, and much of the country traversed is well wooded.

The distances given in the itinerary must be regarded as only approximate.

- 0 **Kirmasti**, alt. 110 ft. Track runs almost SSE. up the well-cultivated valley of the **Adranos Chai**; oak scrub and small firs along the slopes; large walnut and plane-trees on the river-banks.



miles

An alternative track runs E., ascending gently to the Muhajir village of **Keltash**, alt. 610 ft., and then S. via **Assaraly** to the Adranos valley.

10 **Chamandar**, Muhajir village. Here the Balat (or Sinjan) Chai comes down a narrow valley from the SE. and joins the Adranos Chai. Direction now NE.

12 **Kestelek**, alt. 235 ft., formerly the head-quarters of a nahie, now an unimportant village. It is the only non-Muhajir village passed hitherto.

Here the valley narrows, the river coming in a great bend down a gorge. Track crosses the river and ascends a steep wooded range of hills, on the summit of which are the ruins of a small castle, apparently Byzantine, commanding the deep winding valley and the pass over the hills. From here the track descends over hills slightly wooded and, regaining the valley of the Adranos Chai, passes through the orchards and vineyards of **Karaja Köi**. Immediately to the E. of this village the river emerges from a deep ravine.

Track now ascends wooded hills and continues for some miles through pine forest, crossing a succession of glens, down each of which a clear stream runs in a rocky bed to join the Adranos Chai.

21 Track turns S., leaving the Adranos valley, and ascends rapidly through pine forest, which becomes less thick higher up. The country here is very thinly populated.

26 Summit; fewer pines here, but many junipers.

Track continues along the top of the ridge.

29 Descent begins; the pine woods now come to an end.

32 A broad well-cultivated valley opens on the r. Jibeli village 2 miles to r., and near it a small hill with the ruins of a castle.

33½ Enter another extensive pine forest. To N. the

miles

ground slopes to the Adranos Chai; to S. is a high limestone chain running E. and W.

Track passes through the villages of **Dondar Kõi** and **Burma**, alt. about 1,700 ft. A track comes in on the r. from Kepsut (see Route 59, mile 49½).

39 Track again enters the valley of the Adranos Chai at the village of **Kayajyk**. The river here comes from the SE. through a broad valley.

41½ Cross a stream flowing from the SW. to the Adranos Chai. Track crosses a low range of hills.

43 **Adranos Chiftlik**.

46 **Beyje**, alt. 1,640 ft.

## ROUTE 58

### KESTELEK—KEBSUT, 42 miles

It is not certain whether this road is fit for wheels. It is said to be a good araba-road, though unmetalled, during the first stages and again from the Delanderos Bel (mile 28½), but there are possibly stretches about the middle of the journey where it is fit only for pack-transport.

Supplies are scanty. Nearly everywhere along the route there is timber, chiefly oak, and abundance of oak scrub.

0 **Kestelek**, alt. 235 ft. Track at first descends the r. bank of the **Adranos Chai**.

1 Ford the river and continue down the l. bank.

2 Ascend a little, leaving the river, and descend into the valley of the **Güne Chai** (Balat Chai) about ¾ mile above its junction with the Adranos Chai.

3 From this point **Kynsoros** lies 1 mile distant, high up on the opposite bank of the Güne Chai, which itself flows about 300 yds. away on the W. Behind, on the r. bank of the Adranos Chai, is **Jamandar**, just above the junction of the rivers, and on the l. bank, ½ mile below the junction round the bend which the

miles

- river makes to NW., **Chausk Köi**. The Kazyk Bel is visible far to the S.
- 4 **Baljuk.**
- 4½ Ford across the Güne Chai. Track continues up the valley.
- 5½ **Devejikona.**
- 6½ **Gundordu** ¼ mile to E. Gentle ascent begins, with a westerly trend away from the river.
- 7½ **Yenije Köi.** Track ascends SW. through oak forest.
- 10½ From this point there is a good view of Dede Tepesi and the bend of the Güne Chai up to Baluk Köi (see Route 75, miles 23 and 26½).
- Track continues to ascend.
- 12 **Güvern**, well-kept Circassian village.
- After some distance the track follows a valley running N. and S.
- 18 **Malteros.** Track ascends W. up a ridge.
- 19 Summit.
- 19½ Cross a stream-bed and ascend another ridge.
- 21 Summit.
- 22 **Sejkköi.**
- 23½ Small Yürük village, also called Sejkköi. It lies at the entrance to a small wooded glen, over which rises on the SW. a double-peaked hill about ½ mile from the village.
- Track now runs at first W., and then more SW.
- 26 **Gülkköi** 1½ mile to r. Track descends and again ascends through oak scrub.
- 28½ **Delanderos Bel**, an insignificant col with a yaila of woodcutters at the top. This summit seems to be the watershed between the Güne Chai and the Simav Chai.
- On the S. side a valley runs down to the W. On the other side of the valley, 2 miles SE. of the track, lies Iyade. A good unmetalled araba-road is now joined and followed W. along the hill-side on the r. of the valley. At first it is fairly level.

miles

- 30 Descent for some distance. About here apparently a track comes in from Beyje (see Route 59 in the reverse direction).
- 32 **Esse Alany** 1 mile to l. Short ascent.
- 33 Summit, commanding a wide view W. and S. Kepsut and Balikesr are visible in the plain below, the Alacham Dagħ bounds the horizon almost due S., and Yelany Dagħ lies 15° or 20° N. of W., with the Susurlu-Bigadich road winding down the side of it.
- 34 **Maje**, Rumelian village. Above it on the S. or SW. rises a conical hill known as Hutelik. Road descends steeply about 1,000 ft. into the valley.
- 35½ Cross a stream.
- 35¾ **Tatarjylar**.
- 36¼ **Mehmedler**, small village. Road continues down the valley between hills bare except for scrub.
- 39 **Gechid Deresi** at the edge of the plain.
- 40½ **Tekke Kõi** ½ mile to r. on a hill.
- 42 **Kepsut**, alt. 410 ft.

## ROUTE 59

## KEBSUT—BEYJE, 60 miles

The country through which this route passes is little known. It consists largely of high plateaus enclosed by wooded hills and broken by numerous streams.

None of the villages passed are large, and supplies are therefore scanty. Water is plentiful from streams throughout.

- 0 **Kepsut**, alt. 410 ft. For the first 12 miles the track given in the reverse direction over the last stage of Route 58 seems to be followed.
- 12 **Col.**, alt. 2,815 ft. The track to Kestelek apparently here branches to l. (see Route 58, mile 30).

miles

Track bends SE. along a ridge through oak and pine forest. After some distance it begins to cross a broad undulating grassy plateau, alt. 3,380 ft., dotted here and there with single trees.

15 Descend a valley through straggling pine woods.

18 Saw-mill. Some distance farther on is **Erejik**, Yürük village, alt. 2,685 ft.

Track runs E. across the valley and ascends a ridge, alt. 3,200 ft. From the summit a view opens out of a valley system in front. Several villages are to be seen.

Track then continues NE. across several stream valleys, whose waters unite to form a tributary of the Simav Chai.

22 Ascend a ridge which forms the watershed between the streams just crossed and those of the Balat Chai.

23½ **Hamzajyk** village.

26 **Odo Köi**, alt. 2,350 ft.

Ascend a valley between low hills through thick pine woods, and, higher up, through beech forest.

28½ Direction now more easterly, across a plateau called **Monastir Yailasy**, alt. 3,660 ft., dominated by the Monastir Dagh on the NE.

Beyond the plateau the track crosses the upper end of a valley which falls rapidly N., narrowing to a wild ravine which separates the Monastir Dagh on the E. and N. from the surrounding region.

The track ascends E. along a ridge separated by a deep valley on the S. from the rugged precipices of **Dishkaya**. The height of Dishkaya is almost equal to that of the Monastir Dagh.

From the ridge a descent is made NE. through beech forest.

33 Cross a deep valley cultivated in terraces along the slopes. The valley runs E. to the Balat Chai.

Track ascends the r.-hand slope.

miles

- 34 **Karyamas** village on a mountain terrace.
- 35 Alt. 2,270 ft. View opens here at the edge of a terrace overlooking the Balat Chai. The stream here flows in a deep narrow valley.  
Descend through pine forest.
- 36 Cross the river by a wooden bridge 47 paces long, alt. 830 ft. The eastern slope is furrowed by small cascades and covered with luxuriant vegetation.  
Track ascends NE. high above the river.
- 39 **Örenjik**, alt. 2,220 ft., small Yürük village on a mountain terrace, at the foot of a white conical hill; another hill, covered with forest, to N.  
Here a track from Balat to Kestelek crosses the present route (see Route 75, mile 22).  
Direction now NNE. round the head of a valley, and over a deep side-valley running to the Balat Chai. The track then ascends the hill on the N. side of the valley, passing on the r. the wooded hill mentioned above. Here there are oak scrub and occasional cultivation. Then follows a descent through small valleys wooded with oaks, beeches, and evergreen oak scrub down into a larger valley.
- 43 Cross the stream in the valley and ascend the northern slope.
- 44½ Summit. Descend into an easy valley running NNE.; stream on l.
- 47 **Sagyrlar** village on the slope to r.
- 47½ The stream on the l. bends abruptly W. by N., alt. 1,830 ft. **Tashman Köi**, Yürük village, downstream to l.  
Track ascends over a rise and descends into a valley sloping gently N. to the Adranos Chai.
- 49½ **Dondar Köi**, alt. 1,710 ft.  
About here the track joins the route from Kirmasti (see Route 57, under mile 33½).
- 60 **Beyje**, alt. 1,640 ft.

## ROUTE 60

## BEYJÉ—BRUSSA

Via AKCHELER, 48 miles

This is a horse-track to Akcheler (mile 30). Along this stage it possibly follows the line of an ancient road which seems to have run from Apollonia to Hadrianoi. There do not appear to be any special difficulties *en route*.

Up to Akcheler supplies are probably scarce; between mile 13 and mile 16½, however, there are several villages on or near the track, and the neighbourhood appears to be fairly well cultivated. There is abundance of timber and fuel through the hills, and water is to be found everywhere either on or near the track.

miles

- |    |  |
|----|--|
| 0  | <b>Beyje</b> , alt. 1,640 ft. Route at first follows that detailed in Route 77 (from mile 39).   |
| 3½ | Delibaba Köprü to r., across which runs the direct road to Brussa.   |
|    | Present route continues down the Adranos Chai.   |
| 7½ | Cross the <b>Adranos Chai</b> by a bridge, alt. 1,040 ft. Track winds N., skirting a bend in the river, and then ascends N. up a small stream valley.                                      |
| 9  | Turn NE. up a side-valley.   |
| 9½ | Ascend N. over a low hill into another larger valley. Easy descent N. down the valley between low wooded hills.  |
| 12 | Valley bends W.; farther down it is known as Haji Ismail Dere. Track continues N. up a side-valley.  |
| 13 | <b>Naarlar</b> village, alt. 1,645 ft.   |
|    | Direction now changes to NW. Gentle ascent at first through pine forest, and then over a series of valleys and ridges which run from the mountains on the N. towards the Haji Ismail Dere. |

miles

- 15½ **Orde Kõi.** Considerable cultivation here; oak scrub and pines.
- 16½ **Bash Kõi.** Some distance beyond this village the track begins to ascend gently up the mountain.
- 19 Summit of an oak-covered ridge, alt. 2,600 ft. Descend into a valley.
- 19½ Spring on r. Cross the stream in the valley and ascend to a plateau covered with oak scrub.
- 21½ **Armudalan** village to r. Gentle ascent through oak scrub.
- 25½ Mound on r. surrounded by a large ring of stones; spring beyond the mound.  
Track changes direction to N., still ascending; low bush and deciduous oaks the main vegetation here.
- 28½ Narrow pass through a limestone ridge, which here breaks the uniformity of the landscape; Hellenistic tower and graves on r.  
Track now descends the low forehills.
- 30 **Akcheler.** For the rest of the journey to Brussa see Route 56, from mile 22½.
- 48 **Brussa,** alt. 590 ft.

## ROUTE 61

## BRUSSA—BEYJE

*Via* THE KAPULU KAYA, 35½ miles

This is a rather difficult horse-track except for the first 2 miles. The most difficult stage is between mile 10½ and mile 16½.

Rough pasture should be obtainable throughout, but supplies are generally scanty except at the beginning and the end of the route. Water is fairly abundant throughout, and there seems to be a considerable amount of timber at least from about mile 20.



miles

- 0 **Brussa**, alt. 590 ft. Route follows the chaussée which runs to Chekirje.
- 2 **Chekirje**. Turn S. at the far end of the village into a rough horse-track, descending at first through cultivated land.
- 3½ Cross a stream (? the Ülfer Chai), fordable in August. A stone bridge at this point was swept away in the early '90's, and it is not known if it has been replaced.
- 5½ **Missi Kõi** in a well-wooded and watered valley among chestnut, walnut, and fruit-trees.  
Track continues to ascend.
- 8½ Reach a summit. Track now enters an upland valley.
- 9¾ Leave the valley and cross the **Kurt Ova**, a small plateau about 1 mile broad.
- 10½ Spring at the edge of the plateau.  
Long ascent begins.
- 12 Summit; wide view N. to the Sea of Marmara, E. to Mt. Olympus, and S. to the Kapulu Kaya pass (see mile 13¾).
- 12¾ Track descends steeply into a valley, the **Kamjy Derkan Deresi**.
- 13¾ Cross the stream in the valley, alt. about 1,000 ft. less than the summit just crossed.  
Track ascends almost equally steeply up a magnificent gorge called **Kapulu Kaya**.
- 16½ Track emerges from the pass on to a small plateau; guard-house here.
- 18¾ Cross the watershed, a lofty summit with a fine view over the valley of the Adranos Chai.  
Descend through rough upland pasture.
- 21½ **Narynlar** village; fountain. The village is perhaps identical with the Naarlur of Route 60, mile 13.  
Track runs S. through pine forest with oak scrub up the valley of a small stream. It probably coincides for some distance with Route 60.

miles	
23	Pass a saw-mill, and another a short distance on.
24	Cross a stream coming down a valley on the l.
25½	<b>Kurt Kapane</b> , cultivated clearing. Track turns up to the r., over a summit which gives a wide view, and then descends steadily towards the river.
26½	Karynjaly 2 miles to r.
27¾	<b>Yurgek</b> , small village near the foot of the descent. Gürenjik village about 1½ mile distant, high up on the opposite bank. Track descends slightly, runs for a short distance along the r. bank of the Adranos Chai, and then cuts across a bend.
29¾	Reach the river again near <b>Akchebük</b> . Track follows the river.
31	<b>Köleler</b> 300 yds. to l.
32¼	Bridge ( <b>Delibaba Köprü</b> ) over the river. Track here joins Route 77, mile 42¼.
35½	<b>Beyje</b> , alt. 1,640 ft.

## ROUTE 62

### MUDANIA—BRUSSA, 18 miles

There is no recent information available regarding this route. It is fit for wheels, though part of it in the Ülfer Chai plain may be liable to be flooded. The first part of the route rises with many windings to a height of 886 ft. and then drops down 650 ft. to the bridge over the Ülfer Chai.

The country which the route traverses is generally very fertile, but does not appear to be extensively cultivated.

There is plenty of water throughout.

- 0 | **Mudania**. P. and T.; head-quarters of the kaza of the same name in the merkez-sanjak of Brussa; pop. 6,000, mainly Greek. Mudania is the chief port of

miles

the vilayet of Brussa, and has some repute as a health resort. It is connected with Brussa by a railway. Some silk-spinning is carried on, and there are several oil-factories. Road ascends through gardens and orchards up the slopes which form the S. shore of the Gulf of Gemlik. Below to l. is the plain of Burgas, with mulberry, vine, and fig cultivation, and some oaks.

3½ **Missespoli** village on l.

5 Road now runs over low bare hills; soil rich and loamy.

7 **Bademli** village between the road and the railway, which now approaches and runs close to the road for about ½ mile.

Road now bends SE. across the flat rich plain of the **Ülfer Chai**.

9 Bridge over the **Ülfer Chai**. The river has cut for itself a deep bed in the clayey soil; the banks are thickly wooded with tamarisks and planes; low grassy hills to r., dotted with small oaks, wild almond, and wild pear trees. Road, passes **Koru** village and, leaving the railway, ascends the hills after some distance.

13 Summit. **Himetli** village to l. The town of Brussa now comes into view.

Road descends to the plain and runs over undulating ground, at first through corn-land and farther on through mulberry cultivation.

15 Recross the **Ülfer Chai** by a bridge.

15½ Road joins that from **Mikhali**j (see Route 55, mile 41).

18 **Brussa**.

## ROUTE 63

GEMLIK—MIKHALIJ, about 52 miles

The town of Gemlik is the head-quarters of the kaza of the same name in the merkez-sanjak of Brussa. The population numbers over 5,000, mainly Greeks. The place owes its importance chiefly to its naval yards. The bulk of the trade consists in the export of chrome ore from the Dagardy mines (see pp. 79 and 80), and in the import of petrol.

The road runs W. along the coast, sometimes at a considerable height above the sea, sometimes along the beach. In places it is even necessary to pass through the water. There appears to be a good deal of cereal, vine, and olive cultivation along the route for at least 9 or 10 miles. **Kurmushlu**, passed about mile 10, is a small village, half-Turkish, half-Greek. About  $2\frac{1}{2}$  miles farther on is **Altyn Tash**, a Turkish village picturesquely situated on the cliff. **Burgas** village, about  $2\frac{1}{2}$  miles from Altyn Tash, is situated right at the water's edge.

From **Mudania** (mile 18) the road continues along the coast. The small Greek village of **Arnaut Kõi** is passed after about 1 mile, and the flourishing village of **Siki** (also Greek, with about 400 houses)  $2\frac{1}{2}$  miles farther on. After another 2 miles **Triglia**, a large village of 500 houses, nearly all Greek, is reached. There is a large amount of olive and mulberry cultivation here. The road now turns inland, and in about 6 miles reaches **Yaly Chiftlik**, beyond which place it continues through bare rolling country, fairly well cultivated, to **Chamlyja**. This is a village of emigrants from the Mainote district of Peloponnesus, and lies not far from the Nilufer Chai (**Ülfer Chai**) and about 11 miles from Yaly Chiftlik. About 1 mile farther, **Cheshnir**, also a Mainote village, is passed, and the **Rhyndakos** (here called the Mikhalij Chai) is reached after another 3 miles. The current at this point is fairly strong. The stream is crossed by ferry. On the l. bank, a little below the point where the Nilufer Chai joins the main river, is the small village of

**Mikhalij Iskelesi.** About 2 miles farther, following the river valley, the route passes **Charykköi**, and about 3 miles farther recrosses to the r. bank of the river near the Muhajir village of **Chaly**. The banks here are about 10 ft. high, and the river is now called **Susygyrly Chai**. It is about 160 ft. wide, with a strong current. In 1902 the mediaeval stone bridge and the modern wooden one were in ruins, and the river was crossed by a ferry. The route now follows a mediaeval stone dam across the marshy plain for another 2 miles to **Mikhalij**.

There is no information as to the present condition of the road.

## ROUTE 64

### GEMLIK—BRUSSA, 20 miles

There is no recent description of this route available. The road was reported in 1900 to be in bad repair, but the most recent maps mark it as a chaussée. It is very difficult in wet weather, when a rough hill-track over the Katyrly Dagħ on the l. is followed. The latter is often covered with deep snow in winter. After crossing the **Garsak Su**, the small river which drains the Iznik Göl, the main route leaves the Moslem village of **Engürjik** to l. and begins to ascend a ridge, from which it descends to a guard-house and kahve (about 1½ hr. from Gemlik). Beyond this a second and higher ridge is crossed, and a second guard-house and kahve reached (3 hrs. from Gemlik). From here the road lies over a lower but very rough ridge to a third guard-house and kahve among plane-trees, whence it descends towards the fertile plain of Brussa. Before reaching the plain the large village of **Demirtash** is passed on the r.

The hills crossed are partly wooded and produce fine grass. The total distance is about 20 miles.

## ROUTE 65

BRUSSA—IZNIK, 45½ miles

There is no recent information available for this road. It is probably fit for wheels throughout. Supplies, timber, and water are plentiful.

miles

- |    |  |
|----|--|
| 0  | <b>Brussa.</b> Route runs through the fairly well-paved streets of the E. end of the town.   |
| 1½ | Road now lies between gardens; to l. the half-ruined mosque of the Sultan Bayezid Yilderim on a hill. Direction almost due E. through the rich plain, parallel to Mt. Olympus on the r., and about ½ mile or ¾ mile distant from it; walnut, chestnut, apricot, and peach-trees along the road. Several streams from the mountain are crossed.   |
| 7  | Cross the <b>Deli Chai</b> , ascend along the slope of a hill, and then descend into a valley.   |
| 8½ | The chaussée to Inegöl branches to r. up the Uluja Boghaz (see Route 86). Present route continues E. along the foot of the hills.  |
| 8¾ | <b>Kestel</b> village among well-cultivated fields.<br>Road passes close beneath a ruined castle on a low rocky hill, and then crosses a small stream.<br>The plain now narrows to a valley about 2½ miles wide at this point. On the N. slopes lies Barak Köi, a large village. In the valley plain at first are rich meadows, through which a brook winds. Then comes a deep impenetrable swamp, thickly covered with vegetation. Here and there in the swamp are islands of solid ground.<br>The soil here is extraordinarily fertile. Grass, many kinds of plants, reeds, and shrubs grow luxuriantly. Wild vines and other creeping plants cover the trees.<br>Road keeps close along the hills on the r. |

miles

12

Cross a stone bridge and enter meadow-land covered with high plane-trees. The marsh recedes on the l. ; to r. are still rocky wooded hills, which now open in a picturesque gorge. Down the gorge comes a stream which runs NE. Road ascends and a view opens out of a lake of almost circular shape, into which the stream empties itself. The lake is called **Göl Bashy**. It is about  $2\frac{1}{2}$  miles across and deep. Behind it lies a village of the same name, between rocky spurs. On the mountain to l. lies the small village of Budaklö.

Direction now E. by S.

16½

Summit; no trees here. Lower down oak forest begins.

17½

**Timbos** village; mulberry cultivation. A stream rises near the village, and the road follows it E.

20

Road and stream enter a valley running NE.

21

Enter the large plain of Yenishehir. The western end of the plain is covered with reeds and was formerly a marsh; the soil is extremely fertile.

24

Road follows the hills on the l. in an ENE. direction.

Two fine springs; the reeds now come to an end, and the ground is cultivated. The plain is about 9 miles wide.

29

About here a chaussée, of which no details are available, branches NW. through the hills to join the Iznik-Gemlik road at the western end of the Iznik Göl.

**Chardak Köi**. A number of villages in the plain and on the hill-slopes.

34

**Yenishehir**, head-quarters of a kaza, pop. about 5,000.

A road, apparently fit for wheels, continues ENE. down the valley of the **Gökche Su**, which comes in on the r. This road runs to **Köprü Hissar** (about  $7\frac{1}{2}$  miles). At Köprü Hissar it crosses the river by a stone bridge

miles

of three arches and, leaving the valley, runs SE. over undulating, little cultivated country to **Bilejik** (about 26 miles from Yenishehir).

Road passes a ruined mosque outside the town and turns NE., ascending hills thickly covered with undergrowth and oaks.

39 Summit. Turkish cemetery among high trees. To l. is the small village of **Bamushar Derbend** on the slope of a rocky spur. View to N. and NE. over the Iznik Göl.

40½ Guard-house. Path rounds a small spur and Iznik comes in sight. Winding descent through thick forest of olives.

43½ Guard-house and large Turkish tomb. The road to Gemlik branches to l. (see Route 66). Olive cultivation ceases. Road now skirts the sandy shore of the Iznik Göl; marshy ground to r.

45½ **Iznik**, head-quarters of a nahie; an unimportant place, chiefly noteworthy as the site of the ancient Nicaea.

## ROUTE 66

### IZNIK—GEMLIK

#### *Via* THE S. SIDE OF THE IZNIK GÖL

This route follows the line of the ancient Roman road along the S. shore of the Iznik Göl, and is said to be good throughout. It was while advancing along this road that Walter the Penniless and 22,000 knights and pilgrims lost their lives in battle with the Seljuks (1096).

The distance is about 33 miles.



## ROUTE 67

## IZNIK—GEMLIK

*Via* THE N. SIDE OF THE IZNIK GÖL

This route follows the E. and N. sides of the lake (for some details of the first few miles see Route 68). Beyond the point where the road to Hersek branches to r. the present route runs over bare hills and farther on through olive groves.

The distance is a mile or two longer than the road along the S. shore.

## ROUTE 68

## IZNIK—HERSEK, 31 miles

This route follows the line of an important Byzantine road. There is no evidence to show whether it is at present fit for wheeled traffic.

Supplies are plentiful for the first 10 miles. Along the stage up to the summit (mile 15) they are probably scanty, but fuel is plentiful. From the summit to where the Kyrk Gechit Chai enters the plain (mile 28½) there is little cultivation owing to the narrowness of the valley.

miles

0

**Iznik.** Road runs N. along the E. shore of the lake.

1½

Turn W. through the plain.

3

Obelisk of Cassius Asclepiodotus to r.

Direction now NW. The plain is well watered and marshy in places. To r. on the high ground is the large village of El Beylik, past which a road runs to Izmid (see Route 70). Two stone bridges are crossed, and farther on the road passes through olive groves.

10½

Cross a third stone bridge.

Road now begins to ascend the hills. The large village of Boyulyja is seen down below on the shore of the lake.

miles

- 11½ Iznik disappears from view.
- 15 Descent begins down the narrow valley of Kyz Derbend.
- 16¾ **Kyz Derbend**, fairly large village above the valley, which is still narrow ; shrubs and gardens with some cereal and mulberry cultivation.  
Road follows a stream.
- 18½ Mill on the stream among plane-trees. Four stone bridges are crossed.
- 21½ Here the stream joins the **Kyrk Gechit Chai**, which comes from a valley to r. Road crosses the river by a fine bridge of 3 arches, 190 ft. long, and then runs NNW. The valley is not more than 500 paces wide, and the course of the river winds so much that in a distance of about 1½ mile it has to be crossed three times ; small village to r. on the high ground.
- 24 Road again crosses the river and passes the ruins of a mediaeval bridge. The valley narrows to a ravine, with a general direction N. 30° W. The river is crossed six times within the next mile.
- 25 Steep cliff to r. and a wall of rock in front, round which the river has barely room to pass. Beyond this wall the rock crosses the river for the twelfth time. General direction N. by W. The ravine widens to a breadth of 200 paces. Small isolated hills to l., with a valley running up towards the SW. ; cliffs to r., and in front, on a wooded hill, the ruins of a fortress, perhaps built by the Crusaders to command the pass. The river flows round the base of the hill and separates it from the hills round about.
- 26 Road passes the castle and again reaches the river, which now breaks through a rocky gorge, and within a short distance is crossed five times. Direction here NE. ; the ravine widens to about 400 paces.
- 27¾ Direction changes to WNW. ; in front on the high ground is **Subashy Köi**. A little farther on the direction

miles

changes to N. by E., and the Gulf of Izmid comes into view. The river is crossed twice.

28 $\frac{3}{4}$     The ravine opens on to the plain.

30 $\frac{1}{4}$     Spring. Road follows a stone dam through marshy ground.

31    **Hersek**, small place with a fine mosque. About 1 $\frac{1}{2}$  mile NE. by N. is the landing-stage for a ferry between the N. and S. shores of the gulf.

## ROUTE 69

IZNIK—BILEJIK, about 37 miles

There is no recent information about this route. The country traversed seems to be well cultivated as far as Lefke (mile 16).

0    **Iznik**. Track runs first across the level at the E. end of the lake, and then ascends the hills on the r.

4 $\frac{1}{2}$     The lake now disappears from view; in front is plateau country, broken by deep wooded valleys, stretching to the Sakaria valley.

12 $\frac{1}{2}$     Cross the **Bedre Chai** (ancient Gallus) by a fine stone bridge.

An easy track leads from here to Yenishehir. It runs through vine and mulberry cultivation up the l. bank of the Bedre Chai. After about 3 $\frac{1}{2}$  miles a conical hill called **Iki Kule** is passed. It rises about 180 ft. above the water, and on it are the ruins of an ancient fortress. A few hundred yards above this point the river emerges from a narrow gorge, and the track bends to r. up a wooded side-valley, the **Eyerje Dere**, the stream in which is dry in summer. The valley leads by a gentle descent to the village of **Eyerje**, which lies about 5 miles from Iki Kule on a well-cultivated plateau. About 2 $\frac{1}{2}$  miles farther in a SW.

- miles | direction is **Tersiler** village on the edge of the Yeni-shehir plain, whence it is possible either to proceed direct across the plain or to go SSW. for nearly 2 miles over partly marshy ground to **Köprü Hissar** and then by the chaussée to **Yenishehir** (see Route 65, under mile 34).
- 16 | **Lefke** village of about 400 houses. Cereals are grown in the plain; vine and mulberry cultivation, and pasture for sheep and goats, on the slopes. Track now apparently runs up the Sakaria valley.
- 28 | **Veziir Khan**, partly Greek, partly Turkish village. From Veziir Khan there are no details of the road available. An old account states that the path is very heavy in wet weather.
- c. 37 | **Bilejik**.

## ROUTE 70

IZMID—IZNIK, ? 30 miles

The road rounds the head of the gulf, skirting the salt-pans which lie along the shore on the r. and crosses the **Kilis Su** by a stone bridge. Reaching the foot of the hills it takes a westerly trend up a stream valley, leaving a ruined castle to r. The hills now converge. The slopes are easy and wooded towards the summit. Down below there is a considerable amount of cultivation, mainly maize. Higher up the valley the track runs through scrub, crossing and recrossing the stream and following in places the line of an ancient Roman road. After crossing the crest of the ridge the track descends the valley of the **Uzun Chai** between hills covered with thorny scrub past the villages of **Kyrmzyly** and **El Beylik** to the alluvial plain, across which it runs through well-watered gardens and mulberry plantations to **Iznik**.

The total distance appears to be about 30 miles. There is no evidence to show whether the road is fit for wheels.

## ROUTE 71

## IZMID—SABANJA, 20 miles

This is said to be the only carriage-road in the whole of the mutessariflik of Izmid. Since the building of the Anatolian railway it has probably lost a good deal of its importance as part of the caravan-route from Scutari into the interior. There is, however, very considerable local traffic, the whole district being well cultivated and thickly populated.

The road runs E. over level plain through maize, rice, and melon cultivation. After some miles the plain narrows, and the road ascends somewhat over low spurs which come down from the N. At about  $12\frac{1}{2}$  miles from Izmid the Sabanja Lake is reached, and the road runs along the foot of the hills on the S. side of the lake. The lower slopes are covered with vines and scrub, while higher up are fine woods.

**Sabanja**, about 20 miles from Izmid, lies among trees between the hills and the lake. It is famed for apples, pears, and peaches. Wheat, corn, tobacco, cotton, potatoes, vines, and mulberries are extensively cultivated. The neighbourhood is said to suffer from malaria.

## ROUTE 72

## SUSURLU—BIGADICH, 41 miles

This road follows what is probably a very ancient route. Supplies are scarce except in the neighbourhood of Susurlu, Keksut (mile  $17\frac{1}{4}$ ), and Bigadich. The hills crossed are well wooded with timber and scrub.

The road is unmetalled except for the first 6 miles, but might be passable for carts.

miles

- 0     **Susurlu**, alt. 275 ft. The Simav Chai is here called Susurlu Chai. Track runs up the W. side of the valley, which here begins to narrow. The heights on the E. are thickly wooded and higher than those on the W.
- 3 $\frac{1}{4}$      Late Roman or Byzantine bridge to l. over the river, broken down shortly before 1902.  
Road continues up the l. bank of the river, which here flows from W. to E.
- 3 $\frac{3}{4}$      **Sultanshehir** village. Here the river makes a sharp bend coming from the SE. The Kara Dere from the SW. here joins the Susurlu Chai. **Azizie** village between the rivers to l.
- 6     Track branches to l. from the Balikesr chaussée (see Route 29, mile 20 $\frac{1}{2}$ ).  
Cross the **Kara Dere**.  
Important borax mines near here. A hot spring said to contain borax rises some miles to E. on the r. bank of the river.  
Track now runs over low undulations.
- 7 $\frac{1}{2}$      Reach the edge of a small plain. Near here the river is fordable in low water to Yildiz village, which lies SE. on the r. bank of the river.
- 8 $\frac{1}{2}$      Cross a stream and begin to ascend the N. side of the **Yelany Dag**, round the E. side of which the river flows in a narrow valley. Oak scrub on the slopes.
- 12 $\frac{1}{2}$      Summit, alt. 1,275 ft. View opens out of the plain of Keksut and the hill country beyond.
- 14 $\frac{1}{4}$      **Rejebköi**, Muhajir village at the foot of the descent. Some distance on a small hill with ancient ruins is passed.
- 16     Cross the **Susurlu Chai** by a wooden bridge. It is about 160 yds. broad at this point.  
Road turns E. and fords the **Kille Su**, a tributary much smaller than the main stream.
- 17 $\frac{1}{4}$      **Keksut**, alt. 410 ft., market town of about 300 houses; population mainly Turks, with a few Greeks.

miles

The place is the head-quarters of a nahie. It lies in the middle of a small very fertile plain cultivated with corn, rye, barley, maize, opium, sesame, and cotton. There is also some trade in valonia, and the mulberry is cultivated. There are many ancient sites in the plain, the stones of which have been used in building the present town.

17 $\frac{3}{4}$ 

Recross the Kille Su by a wooden bridge 120 paces long, and continue up the W. bank of the stream through a broad valley; conical hill to r.

20 $\frac{3}{4}$ 

The valley narrows, and the country becomes rougher and more undulating, with bare scrub-covered hills and little soil. Cross a low ridge, on the W. side of which rises a higher flat-topped hill. The hills to E. are higher than those on the W.

21 $\frac{3}{4}$ 

Cross another similar ridge.

22 $\frac{1}{2}$ 

**Mushurat**, Yürük village to l. at the foot of a steep slope on the E. side of the Kille Su.

23

The Küchükler Dere, an important tributary, joins the Kille Su on the r. bank. Some distance E. above this stream on the N. is a large cave in the hill-slope.

24

Here the present track leaves the Kille Su and begins to ascend the ridge between it and the main river; gentle slopes covered with oak scrub.

After some distance the track runs along the W. slope of the ridge.

26 $\frac{1}{2}$ 

**Kalburja** village to r. About here the route meets a horse-track which runs from Balikesr to Balat (see Route 73, mile 15).

28

Spring, alt. 1,265 ft.; wide view to W. over the plain of Balikesr.

32

Descend into a side-valley of the river, now called Simav Chai.

33 $\frac{1}{2}$ 

**Osmanja** village in a broad trough between white hills. Track continues through a pass between steep

miles	limestone cliffs into a broad valley bounded by weathered cliffs like ruined towers.
38	Reach the broad valley plain of the Simav Chai. <b>Salmanly</b> village to l. beneath a flat-topped hill.
39	<b>Ishiklar</b> village.
41	<b>Bigadich</b> , alt. 725 ft. ; head-quarters of a kaza in the sanjak of Karasi ; P. and T. ; 700-800 houses. The town lies on the E. side of the plain under a steep wooded hill, on which are the ruins of the mediaeval fortress of Akhyraos. It is surrounded by orchards and vineyards. Maize, opium, sesame, and beans are the chief crops in the neighbourhood. Some tanning is carried on along a stream to S. of the town.

## ROUTE 73

BALIKESR—BALAT, ? 47 miles

The details of this route are taken from an old account rather confused in places. The distances are in some cases taken from the most recent maps, in others calculated from the times given by the original authority.

There appears to have been a regular route in former times between Balikesr and Balat, but whether the track detailed here follows the line of it or not it is impossible to say.

0	<b>Balikesr</b> , alt. 570 ft. Track runs ESE. across the plain, passing the villages of <b>Alaja</b> and <b>Athanas</b> .
6	<b>Kerman</b> village (said to be 3 hrs. W. of Kepsut). Track still runs across plain, passing the large village of <b>Mendura</b> on the Athanas Chai.
9½	<b>Chandyl</b> village.
12	<b>Yeniye Kõi</b> on an elevation connected with the mountains on the S. by easy hills. The village lies above the l. bank of the <b>Simav Chai</b> , here a swift



miles

stream. The river is about 3 ft. deep in May, and the most recent maps give a bridge opposite this point.

Track now runs SE.

- 15     **Kalburja** village. Present route meets a track near here from Susurlu to Bigadich (see Route 72, mile 26½), which it possibly follows for some distance.

- 17½     **Yeni Köi**. Track now ascends over wooded hills into the valley of the **Feresh Chai** (? Kille Su), leaving Feresh village to l. It then ascends the eastern side of the valley.

- 26     **Kayalar** village. After some distance the track enters the valley of the **Zelle Chai** (? Küchükler Dere) and ascends the stream E., passing **Küchükler** to r.

- 32     **Dada** village to l. in two settlements on rounded limestone heights to N. **Akche Güne** a little farther on to r.

- 35     Descend ENE. into a small circular plain.

- 41½     **Idish** village on hills near the track.

Continue over low plateau.

- ? 47     **Balat** (anc. Hadrianeia), alt. 2,320 ft., headquarters of a nahie in the sanjak of Karasi. It is a fair-sized place with a thriving bazar. The population is composed partly of Greeks, most of whom came originally from Imbros.

## ROUTE 74

### BALAT—KEBSUT, 31 miles

The route of which some details are given here is probably the shortest between Balat and Kepsut, but it does not appear to be in regular use. It runs through very picturesque but sparsely populated country.

Supplies are scanty. Timber is plentiful.

The distances given in the itinerary are very uncertain.

miles	
0	<b>Balat</b> , alt. 2,320 ft. Track runs W., coinciding at first apparently with the last few miles of Route 73.
5½	<b>Idish</b> . Here the hills open somewhat. Track branches to r. from that described in Route 73 over hills covered with valonias and scrub.
11½	Sharp descent.
13	<b>Hassanlar</b> . Track continues to descend.
14	Stream, which the track follows.
17	Track bears to r. over country similar to that already traversed.
23	<b>Dunassar</b> at the bottom of a deep valley running W. Ascent over a ridge.
28	<b>Bey Köi</b> ; ancient ruins.
31	<b>Kebsut</b> , alt. 275 ft.

## ROUTE 75

## BALAT—KESTELEK, 47 miles

This route is a horse-track most of the way through mountainous country, and the going is difficult in many places. Supplies are scanty. The country traversed is largely covered with forest. Along the first stages of the route the woods are fairly open, mainly pine with oak scrub except round the villages. Farther on the forest becomes thicker.

The villages are mostly composed of log huts. Along the second half of the route the population is largely Rumelian.

0	<b>Balat</b> , alt. 2,320 ft. Track follows a difficult path NE. down a rocky stream valley through scrub.
3½	Cross to the r. bank of the stream and continue along the hill-side, overlooking on the l. a steep rocky gorge clothed with pines ; serrated hills in front.
4¼	Steep descent.
4¾	Reach the stream at the bottom of the gorge and round a spur.
	Here the valley opens to the r.

miles

- 5 $\frac{1}{4}$  Cross a wooden bridge and ascend from the l. bank up a ridge.
- 7 Summit. Track descends into a valley which runs SE. to join that just left.
- 8 $\frac{1}{4}$  Junction of the streams. Cross to the r. bank and ascend over a low ridge into the valley of the Güne Chai, which runs in a general NW. direction.
- 9 $\frac{3}{4}$  Track fords the river and ascends past the head of a side-valley.
- 11 **Güne** on a spur well above the r. bank of the river.
- Here apparently a track branches to r. through the hills to join the road from Bali to Brussa (Route 77). It runs to **Ak Dere** (also called Mazlum Agha ; ? 1 hr.) and thence to **Erjek** (2 hrs. farther). From Erjek **Kushlar** village is reached in about  $\frac{3}{4}$  hr. through narrow ravines. Two hrs. farther on is **Urkhanlar**. From there it is about 1 $\frac{1}{2}$  hr. to **Kyryer** village and another  $\frac{1}{2}$  hr. to **Argün**. About 2 hrs. beyond Argün **Sunlar** village is reached, whence it is not more than 1 hr. to the Brussa road.
- The present route now ascends NW.
- 11 $\frac{3}{4}$  Summit.
- 15 **Dunjiler** village. Track here strikes round a hill to r. away from the river, but keeps the same general direction and always about 2-3 miles from the main valley ; pine forest and oak scrub.
- 16 **Bayndyr** 1 $\frac{1}{2}$  mile to r. down in a valley.
- 18 Cross a summit. Track bears to r.
- 19 $\frac{1}{2}$  **Damachaly** village of log huts.
- 21 Wide view to N. The Kapulu Kaya (see Route 61, mile 13 $\frac{3}{4}$ ) and Mt. Olympus can be plainly distinguished.
- 22 **Örenjik**. Here the present route crosses a track from Keksut to Beyje (see Route 59, mile 39).

miles

- 23 Cross a stream at the bottom of a ravine and round a striking conical hill called **Dede Tepesi**.
- 24 **Burunja**  $1\frac{1}{2}$  mile to l. across a deep gorge.
- 26 $\frac{1}{2}$  Track descends to the bottom of a valley and then ascends straight up the other side, leaving **Yokary Baluk Köi** 1 mile to r.
- 27 $\frac{3}{4}$  **Ashaghy Baluk Köi** prettily situated among trees on the hill-side, facing E. The village looks prosperous, and the lower parts of the house walls are built of stone.
- 29 Track keeps up the hill in a northerly direction. Direction bends W. to the summit of a spur. The crest commands a fine view across the Balat Chai, which here takes a bend to the l. away from the track. A prominent round-topped hill on the opposite bank seems to be known as Kazyk Bel.
- 30 $\frac{1}{4}$  Track descends to the bottom of a cross-valley and ascends over another ridge.
- 31 $\frac{1}{2}$  Cross a stream and ascend again.
- 32 Summit. **Kara Köi** 1 mile distant across the next ravine. Turn to r. and descend through thick pine forest. No defined track here.
- 33 $\frac{1}{4}$  **Yaila Chiftlik**. Descent continues through forest across a stream flowing from r. to l.
- 35 $\frac{3}{4}$  **Chiveli Cham**, Rumelian hamlet of log huts. Here a good araba-road is joined. Direction now NW. through forest of pines and small slender oaks.
- 38 $\frac{1}{4}$  Wide view to N. over the valley of the Adranos Chai as far as the hills beyond the great plain and the lakes. The western end of the Abulliond Göl can be seen.
- 40 Present track branches to r. from the araba-road.
- 41 **Kyzylerma**, Rumelian village.
- 44 Cross the **Adranos Chai** by a bridge to **Yeni Köi**. The river here is very rapid, but not difficult to ford in autumn. Kulmekje village is visible on a hill-top

miles

- NW. of Yeni Köi, about  $1\frac{1}{2}$  mile distant. The river appears to be recrossed a short distance beyond Yeni Köi.
- 45      Byzantine castle on a hill projecting from a spur into a bend of the river on the S. It commands the valley in both directions. Track recrosses the river.
- 47      **Kestelek**, alt. 235 ft.

## ROUTE 76

BALAT—BALI, ? 31 miles

There is no recent information regarding this route. It is apparently merely a horse-track, and no evidence is available regarding supplies. Water and timber are plentiful.

The distances given in the itinerary are very uncertain.

- 0      **Balat**. For the first 5 miles the track apparently follows that to Simav detailed in Route 82.
- 5      Bridge over the **Balat Chai**. The track to Simav branches to r.  
Track ascends the hills in a general E. direction.
- 9      Cross the **Belke Chai**, which rises in the Dumanly Dag and runs to the Balat Chai.
- $10\frac{1}{2}$       **Jinbunar**  $\frac{1}{2}$  hr. to l. behind a high ridge.
- $12\frac{1}{2}$       **Doghanlar** (? Doghanjylar) about  $\frac{1}{4}$  hr. to l. on a broad plateau crossed by several considerable ridges.
- $14\frac{1}{2}$       Descend to **Gökche Dere**, a village in a narrow valley bounded on the E. by the lofty Kyrkkonak Dag, over which a very steep track leads to Egrigöz
- $16\frac{1}{2}$       Ford a stream running W. Track ascends the slopes of the Kyrkkonak Dag NE.
- $18\frac{1}{2}$       Descend to **Kyrkkonak** (? Kyrkkavak) village.
- 20      **Aidinler** village to NE. Track continues up and down hill.

miles	
24	<b>Chinarjyk</b> to NE. on a steep slope. From here there is apparently a track NE. over the hill to Bali, about 4 miles. Present track runs apparently ESE. over two high ridges and then descends steeply.
28	Cross a stream to <b>Solukunlar</b> village. Direction changes to N. down the stream valley.
30½	Enter the valley of the <b>Egrigöz Chai</b> and cross the tributary followed from Solukunlar.
? 31	<b>Bali.</b>

## ROUTE 77

## BALI—BRUSSA, 66 miles

The route described here is a horse-track, apparently in regular use. In 1901 a chaussée, longer than the pack-road and lying to the W. of it, had been completed between Beyje (mile 39) and Brussa. Another stage, between Harmanjyk (mile 15½) and Beyje, was then in process of construction.

The country passed through is well wooded, but suffers from forest fires. There is no lack of water from streams or springs. Supplies, however, are rather scanty, there being little cultivation except near the villages in the stream valleys.

0	<b>Bali.</b> Track runs E. across the valley plain.
¾	Cross the <b>Egrigöz Chai</b> , alt. 1,417 ft. Track now turns ENE., passing <b>Kadyköi</b> , <b>Östüslar</b> , <b>Yatakly</b> , and <b>Doghanlar</b> , small villages on low hills; a good deal of cultivation, especially opium and cotton. Beyond Doghanlar the track ascends N. up a side-valley, which soon becomes narrow between high hills; stunted firs here and there on the slopes.
5	Spring on r. Reach undulating plateau.
6	Ascend to a terrace, alt. 2,335 ft., on which are the chrome mines of <b>Dagardy</b> (or Alabarda). The mines lie among low fir woods, and in 1901 were

miles

worked only in summer. The ore was removed on camels or donkeys or in small ox-carts by a difficult cart-track to Kutahia, over 40 miles E.

Track now ascends a high ridge, still through fir woods.

8½ Summit of plateau and watershed, alt. 3,045 ft. ; gentle descent.

9½ **Kosluja** village. Patterson's chrome mines 1½ mile W. Track continues through easy hill country broken by broad stream valleys.

12 **Karajy Kōi** ¼ mile to l.

13 **Bektemler** village ; ancient remains, probably belonging to the city which formerly lay on the hill of Gedikören to W. This hill commands the whole district.

The valley now widens out ; considerable cultivation.

14 The stream in the valley to r. joins the **Chardy Chai**, which comes from the E.

Direction now generally NW.

15½ Cross the river. **Harmanjyk**, alt. 2,215 ft., small village beside the large farm of a bey. The place is the seat of a mudir. Round about the ground rises to a plateau about 300 ft. above the river. To the E. this table-land rises in high steps.

Track descends the N. side of the valley WNW.

16 **Kuchmanlar** village, strikingly situated on a hill across the valley, about 3 miles to l.

18 Turn NW. up a side-valley.

19½ **Miranmaden** chrome mines worked by the Patterson Company. The ore is transported to Gemlik on the Sea of Marmara.

Track now ascends a ridge NW., still through fir woods.

22 Summit, alt. 3,270 ft. This is the watershed between the Sinjan Chai system and the Adranos Chai. To

miles

- SW. lies a broad open valley country in which the Egrigöz, Chardy, and Inekullar streams join to form the Alaya Chai.
- 24 Top of a ridge ; thick pine forest.
- 26½ Spring ; many junipers in this neighbourhood ; some pine forest. Track ascends another ridge.
- 28 Col, alt. 3,105 ft. The pass is called **Yenicheri Gedik**. **Mahalla** village 1 mile to l. on a stream. The fir woods now cease. In front is dry sandy country dotted with numerous small villages. Rye is the chief crop grown here.
- 28¾ **Küchük Urkhanlar** to r. **Demirji Köi** to l. Gentle descent down the l. side of a cultivated valley.
- 29½ **Söyüt** on the hill 1½ mile to r. Foot of the descent.
- 30 **Chalaplar Tepesi**, striking conical hill to l. **Tas-manköi** ¼ mile to r.
- 32 **Karaoghlan** village ½ mile to l.
- 33¼ The valley narrows to a ravine. The track ascends the r.-hand slope and over a plateau.
- 36½ Descend into a deep valley running W.
- 39 **Beyje**, alt. 1,640 ft., small clean market town, chief place in the kaza of Adranos, by which name it is often called. The only local industry of importance is the making of large coarse jars. Here the chaussée to Brussa began in 1901. The ruins of the ancient Hadrianoi lie about 1¼ mile NW. They are used as a quarry for local building operations.
- Road now descends gently into the **Adranos** valley, which here is broad and well cultivated with corn, maize, and cotton.
- 42 Byzantine castle to l. on a hill commanding the river-crossing.
- 42¼ Cross the Adranos Chai by a bridge (new in 1901) called **Delibaba Köprü**, alt. 1,215 ft. ; an old bridge near, now in ruins.
- The old pack-track, here described, runs N. on the



miles

- E. side of the chaussée, cutting off the bends. It ascends past the W. end of a rugged chain of hills.
- 47 Cross a ridge, alt. 3,025 ft. Track now runs along the fir-clad mountain-slope.
- 49 Summit of another ridge, alt. 3,275 ft. Descend into a small valley.
- 49½ **Chatak**, small village in the valley. Ascend from the village over a ridge which forms the watershed between the Adranos Chai and the Ülfer Chai. To l. in front is the towering ridge of Kapulu Kaya overlooking a narrow rocky defile. Track bends E., descending steeply into the deep narrow valley of the Ülfer Chai.
- 53 **Sheitan Kõi** to r. farther down the slope. Direction now N. along the slope and then again steeply downwards.
- 55½ Cross the **Ülfer Chai** by a bridge, alt. 1,225 ft. Here the horse-track meets the chaussée again; several villages on terraces along the slopes. On the r. bank of the river the track again takes a short cut up a side-valley and then ascends the N. slope.
- 57½ **Muraslar** village, alt. 2,335 ft., on a high mountain terrace. The chaussée here again meets the pack-route, which a short distance on again takes a more direct track farther E., running N. along the slopes at the W. end of a spur from Mt. Olympus.
- 59½ Watershed, alt. 3,620 ft. View of the Abulliond Göl to W. Track continues through rye-fields and then gradually descends through deciduous forest down a long valley.
- Cross a ridge and reach the N. side of the mountain. Descend steeply through beech and pine, which soon give place to walnut and chestnut. Lower down comes mulberry and vine cultivation.
- 66 **Brussa**, alt. 590 ft.

## ROUTE 78

BALI—EMED, ? 20 miles

It is not known whether this track is in common use between Bali and Egrigöz. From Egrigöz to Emed it is probably fairly well frequented. It is fit only for pack-transport.

The distances given below are very uncertain.

miles	
0	<b>Bali.</b> Route follows for the first 3 miles the track already outlined in the reverse direction in Route 76, miles 28-31.
$\frac{1}{2}$	Cross the stream from Solukunlar and turn S. up the valley.
3	<b>Solukunlar</b> village. From here the track is very difficult, up and down hill.
8	<b>Chakyr</b> village. Continue over steep rough hills.
13	<b>Egrigöz</b> on a saddle-shaped isthmus connecting the hills on the W. with a limestone crag 500 ft. high which commands the valley of the Egrigöz Chai. The crag is crowned by the ruins of a Byzantine castle, the only access to which is by way of a steep stairway, now in ruins, entering it on the W. side. Under the eastern end of the rock and beneath tremendous precipices on the opposite (r.) bank the river has cut a narrow gateway only a few yards broad known as <b>Demir Kapu</b> .
	From Egrigöz there are no details of the route available. It apparently descends ESE. and crosses the river opposite the point at which the Essibey Dere comes in on the r. bank. After following the tributary E. for some distance it seems to run ESE. to Emed.
? 20	<b>Emed.</b> The town is the head-quarters of a nahie under the kaza of Kutahia. It is situated on a terrace, alt. 2,885 ft., surrounded on the N. and E. by low crumbling cliffs and steep earth-slopes. To the S. of

miles

the town are redif barracks built about the beginning of the century. At the lower end is a group of hot springs, one of which seems to contain sulphur.

The town is compact and populous, and on market days is thronged by peasants from the surrounding district.

## ROUTE 79

### EMED—BALAT, 44 miles

This is a pack-track throughout, and the going is very bad in many places. Supplies are scanty. There is a good deal of pine forest along the route, though it is much thinned in places by fires: Assand village (mile 5) is a hot-bed of leprosy.

- 0     **Emed**, alt. 2,885 ft. Track runs W. down a steep valley.
- 2     Cross the **Egrigöz Chai** by a wooden bridge, alt. 2,250 ft. A track branches to r., down the river to Egrigöz.  
Direction still W. up the hills.
- 3     **Yagajyk** village a short distance to r.
- 4     A track branches N. to Egrigöz.
- 5     **Assand** village, alt. about 4,000 ft. A traveller in 1902 found most of the inhabitants of this village afflicted with leprosy.  
Track very bad in places, ascending through pine forest.
- 8     Yaila on the ridge just S. of the southern summit of the Egrigöz Dagh.
- 10    Second yaila; from here the southern summit of the Egrigöz Dagh bears 55°, and a table-topped mountain with a sharp northern corner (? Gökche Dagh) 247°.

miles

- For several miles from here there is no detailed information regarding the track. The only authority available lost the path and made his way through forest, over rocks and fallen trees, past an unnamed village to Tashköi.
- 15 **Tashköi.** Track now bends to l.
- 15½ Ford the **Inekullar Chai.**
- 17 **Sinekler** (see Route 81, mile 22).
- 44 **Balat**, alt. 2,320 ft.

## ROUTE 80

BIGADICH—SIMAV, 63 miles

This route is unfit for wheels and in places is difficult even for pack-transport. Supplies are scarce except in the plain of Sındirgi (mile 15½) and from about mile 40 to Simav. The country traversed is well wooded.

- 0 **Bigadich**, alt. 725 ft. Track runs S. across two streams, passing an extensive burial-ground.
- 1 Turn SE. and ascend the hills.
- 2 Summit, alt. 1,450 ft. Cross a broad hilly basin with stream flowing W.; gentle ascent.
- 5 Cross a col, alt. 1,555 ft., to an undulating plateau, over which the track now runs, descending gradually.
- 5½ **Koja Bey** village to l. on a stream.
- 6½ **Derbend Kahve**; some cultivation and oak scrub.
- 9½ **Chelebiler** village; descent now steeper.
- 12½ Ford the **Simav Chai**, alt. 850 ft.; there is a bridge about 2 miles upstream. Track now crosses a plain; the chief crops grown here are opium and sesame.
- 15½ **Sındirgi**, alt. 915 ft., on the S. edge of the plain. The town has about 600 houses and is the headquarters of a kaza. About half the population are Greeks, most of whom came originally from Imbros

miles

and still speak Greek. The traffic of the district goes almost exclusively to Kyrkaghach and Smyrna.

Track now turns E. across the plain.

16½

Begin to ascend the hills in a NE. direction.

18½

Descent begins into the Simav Chai valley, which the track now ascends almost due E. The valley soon becomes narrow, and is shut in on both sides by high rocky hills; many large planes along the damp banks and on the stony flats along the river. The stream has to be forded several times.

24½

**Ilija**, building with a natural warm bath of 95° F. The water comes by a channel cut in the hill-side from hot sulphur springs about 1 mile to NE. The heat of the water at the source is probably over 180° F.

Some mills in this neighbourhood. The valley now becomes still narrower and more rocky, and the hills on the r. more thickly wooded. The track becomes steep and narrow, and projecting rocks make it difficult for baggage animals to pass. Many wooded ravines run down to the river on either side. Direction ESE.

28½

Track now lies along stony plain on the river-bank in a more easterly direction. The planes here almost overshadow the stream.

35½

Cross a considerable tributary, which comes down a well-cultivated valley from the N.

36

Cross the river by a long wooden bridge of very light construction.

37

Mill by the river.

Route now leaves the stream and ascends steeply for 2 miles by a bad path.

40

**Mumjyk** village on the ridge several hundred feet above the river.

Track now descends again into the valley, which becomes gradually wider. The hills on either side

miles

recede, the ground on the S. sloping gently to a low wooded range running E. and W., behind which rises the higher chain of the Demirji Dagħ. Track runs up the valley over undulating country; corn and opium cultivation; oak scrub on the slopes.

46 **Yeni Kõi**, alt. 2,365 ft. A track comes in here from Balat (see Route 82, mile 42) and continues S. to Demirji 3 hrs. distant among the hills.

51½ **Oskar** village ½ mile to r. Yaselar Kõi to l. beyond the river.

53½ A track comes in on the r. from Demirji (see Route 97, mile 69½).

56 Ascend a steep defile in a narrow ridge running transversely across the valley.

57 Summit, alt. 2,648 ft. Track now enters the high plain of Simav, and runs along the foot of the high wooded hills on the r.; to l. the ground slopes gently to the Simav Göl, a marsh occupying the western end of the plain, whose overflow forms the Simav Chai. Fine walnut-trees along the road; many villages in the plain and on the slopes. Corn, opium, and flax are cultivated in the plain.

Track crosses several streams flowing towards the Simav Göl.

63 **Simav**, alt. 2,720 ft.

## ROUTE 81

### SIMAV—BALAT

*Via SINEKLER*, 49 miles

The first part of this route is a fairly good araba-road. Between mile 14 and mile 20 it degenerates to a rough horse-track and continues unfit for wheels to Balat. From Sinekler (mile 22) there are many steep ascents and descents.

Supplies in small quantities are procurable throughout.

Water may be scarce in autumn. Up to about mile 22½ there is little fuel except scrub. From that point there is pine forest for 6 or 7 miles.

miles

- |     |   |
|-----|---|
| 0   | <b>Simav</b> , alt. 2,720 ft. Road runs N. across the plain and then up over a low watershed.   |
| 8½  | <b>Hamza Bey</b> , small village at the foot of the slope. A stream runs N. down a broad cultivated valley. The hills are covered only with oak scrub.                          |
| 10  | <b>Yemishli</b> village 1 mile to r. on the slope.  |
| 10½ | Cemetery beside the road.   |
| 11½ | Valley narrows to a ravine with steep earth-slopes covered with oak scrub; willows and planes along the stream.   |
| 14½ | <b>Eidemei</b> village high up on the r.<br>Farther on the road degenerates to a rough horse-track. The valley continues straight and narrow, and the stream sinks underground. |
| 20½ | Cross the dry bed of the stream; some striking rocks on both sides of the valley.   |
| 21½ | Recross the stream-bed. <b>Tash Kõi</b> ½ mile to r. near a group of castle-like outcrops of rock.<br>Track turns up a side-valley on the l. bank and ascends steeply.          |
| 22  | <b>Sinekler</b> , poor village. Track ascends NW.   |
| 22½ | From this point the Egrigöz Dagħ bears 110° or 109½°.<br>Track runs through a wood of black junipers, which soon give way to pines.   |
| 23½ | <b>Ramazan</b> to l.  |
| 24½ | <b>Araklar</b> on the summit of a lofty ridge; thick forest.  |
| 25½ | Steep descent into a ravine.  |
| 26½ | Ascent to another summit, whence there is a view NW. to Sinjan Dagħ.  |
| 28  | Descend again steeply into the next valley and ascend slightly.   |

miles	
29	<b>Kissilös.</b> Here the forest comes to an end. The Egrigöz Dagħ bears 117° and Sinjan Dagħ 331°.
29½	<b>Ressuler</b> village of log huts; from here the N. peak of the Egrigöz Dagħ bears 113°.
32	Stony descent through oak scrub.
33	<b>Sakyzlar</b> village of wooden houses on a stream called the Göne Chai. Gradual ascent.
35	<b>Dikeli Tash</b> , pinnacle of rock about 30 ft. high, forming a striking landmark. It rests on a small rise of soft white stone to l. of the road just as it crosses a low col.
39	About here the track joins that detailed (in the reverse direction) in Route 82.
49	<b>Balat</b> , alt. 2,320 ft.

## ROUTE 82

### BALAT—SIMAV

*Via YASÖREN, 59 miles*

This route is a horse-track through forest country which is very little known and sparsely inhabited. The few villages touched are mainly settlements of Yürüks, who are reported to be poor but hospitable.

The neighbourhood of the Ak Dagħ (see mile 21½) is the home of several species of large game, mainly bears, wild pig, and deer.

Water is plentiful from streams throughout.

For an alternative track between Balat and Simav see Route 81.

0	<b>Balat</b> , 2,320 ft. Track runs SE. through gardens and vineyards down a narrow stream valley; some opium cultivation.
2½	Reach the larger valley of the Balat Chai and descend the stream SE. Scrub and fields on the



miles

slopes. The valley is about 350 yds. broad, and well cultivated.

4½ Ascend over a projecting spur.

5 Cross the **Balat Chai** by a bridge, alt. 1,555 ft. At this point apparently a track to Bali branches to l. (see Route 76).

Track leaves the stream, which here bends N. Ascend a stream valley and cross a ridge.

9 Summit, alt. 2,925 ft. Descend into a valley.

10 **Dermenjiler** village in the valley. About here an alternative track to Simav branches E. and then in a general SE. direction via Sinekler (see Route 81).

The present route runs S. across the stream in the Dermenjiler valley and winds round a spur.

11½ **Gökche Bunar**, alt. 2,750 ft., in a small side-valley. The whole district is much broken by streams which unite and flow to join the Balat Chai S. of Balat.

Track ascends the slope.

12 Edge of a wide level plateau, alt. 3,225 ft. Seven large stone tumuli to l. Fine view from here of Mt. Olympus to N.

14 Cross the upper valley of the stream which flows past Dermenjiler, and then ascend over a ridge into a second valley.

16½ **Yasören** hamlet in a small plain, alt. 3,375 ft. To SE. the forest-clad peaks of the Kyrkoluk Dagħ. Ascend a valley covered with evergreen oak scrub.

19½ Summit, alt. 4,220 ft.

20½ **Chanakjy**, Yürük village, alt. 3,705 ft. Descend into the valley of a stream which forms the main tributary, draining the N. slopes of Ak Dagħ to the Balat Chai S. of Balat.

21½ Cross the stream by a bridge, alt. 3,610 ft.

Track now ascends through pine woods, which become continually thicker and higher as one proceeds. Wild pig and bears are common in this region, and deer are said to be found.

miles

23½

Small yaila ; rye and opium cultivation.

Farther on, at a height of nearly 4,400 ft., beech woods begin, and the track ascends rather steeply. The Ak Dagħ is then seen in front, on the far side of an upland valley, into which the track descends. About here is the watershed between the Kille Su, which flows W., and the streams which run to the Balat Chai. To l. is a small lake, lying among irregularly shaped hills.

28 Cross the main upper stream of the Kille Su and follow its valley W. for some distance.

29 Ascend the valley-wall SW.

30 Summit, alt. 5,675 ft. A short distance beyond the summit the beeches disappear.

32 Cross a tributary of the Kille Su, which flows close under the S. slope of the hills. South of it lies a small crescent-shaped plain, about 2 miles long from E. to W. and  $\frac{3}{4}$  mile from N. to S., probably in former times the bed of a lake.

33 Recross the stream.

33½ **Kechir** village, alt. 3,735 ft. The inhabitants are Circassian settlers from Vidin.

Ascend SSW., crossing the watershed between the Kille Su and the Simav Chai.

Track then descends, crossing several small valleys, and over a broad terrace about 1,000 ft. above the Simav Chai. Pine woods and oak scrub on the slopes.

40 Cross the **Simav Chai** by a bridge, alt. 1,790 ft. The river here flows close under the hills on the N. side of the valley.

42 **Yeni Kõi**, alt. 2,365 ft. A track continues S. from Yeni Kõi through the hills to Demirji (see Route 97, miles 79-58½).

For the rest of the journey to Simav see Route 80, from mile 46.

59 **Simav**, alt. 2,720 ft.

## ROUTE 83

## SIMAV—TAVSHANLY, 55 miles

This is a pack-track apparently rough and difficult in places. The stage from Sulya (mile 39) to Tavshanly is said to be fairly easy.

Supplies are scarce except in the neighbourhood of Emed. Water is generally plentiful.

miles

- |     |   |
|-----|---|
| 0   | <b>Simav</b> , alt. 2,720 ft. Track runs in a general N. direction over the plain, crossing several streams which flow to the Simav Göl. The ground is marshy in wet weather.   |
| 5   | <b>Nasha</b> , small village at the mouth of a valley on the E. side of the Simav plain. Track ascends the valley.  |
| 7   | Track leaves the valley and ascends E. up a ridge which forms the southern prolongation of the Egrigöz Dagħ; evergreen oak scrub is the chief vegetation here.  |
| 9½  | Summit, alt. 4,620 ft. The top of the ridge is about ½ mile broad and forms a watershed between the Simav Göl and the Egrigöz Chai. Oak scrub here gives way to pines.<br>Descend into a wooded valley and then ascend again on to a ridge from which the broad valley country of Emed opens out. |
| 14½ | Descend S. across a deep stream valley.   |
| 15½ | <b>Tokat</b> , small chiftlik on a hill terrace, alt. 3,120 ft. General direction now N. by E. through low hills with scanty cultivation.   |
| 16¾ | Recross the stream near a bridge.   |
| 17¾ | Cemetery beside the road.   |
| 19  | Turn to l., ascending out of the valley.  |
| 19¾ | Cross a stream in a shallow parallel valley and ascend over a hill.   |

miles

- 21 **Hassanlar** in a wide broken stream valley. Cross the stream by a bridge a little below the village; remains of an ancient settlement near, and a large quantity of iron-stone slag on the slope.
- Track now runs across a plateau; view down into the valley of the **Egrigöz Chai**, here 1-1½ mile broad.
- 24 Warm spring impregnated with iron (temperature ? 122° F.), and baths.
- 24½ **Yeni Köi**, alt. 3,120 ft., large village of stone houses on a clear stream.
- Track here bends E., descending easy slopes through fields and juniper scrub.
- 27 Cross the **Egrigöz Chai**, alt. 2,270 ft. The valley-floor here is about 200 yds. broad. Ascend over cultivated terraces.
- 29 **Emed**, alt. 2,885 ft. (For description see Route 78, mile 20.)
- Track now descends steeply.
- 31 Cross the bare rocky **Essibey Dere**, which runs from E. to W., falling rapidly in the direction of **Egrigöz** (see Route 78, mile 13). Track now ascends steeply up the side of the valley.
- 32 Summit.
- 33 **Athir** village 300 yds. to l. on the summit of the ridge.
- 34½ Descend steeply through scrub into a deep rocky valley, the **Jeviz Dere**.
- 35½ Cross the stream and follow it downwards.
- 37½ Leave the stream and turn NW., ascending the hill past a striking rocky knoll.
- 39 **Sulya** village, composed of three hamlets. At about this point a track comes in on the l. from **Balat**. It is possibly a branch from that described in Route 78 and probably leaves the latter near **Chakyr**. The country to N. is open and cultivated with vineyards, corn-fields, and fruit-trees.

miles

- Track ascends a little and then descends into a side-valley, the **Bodaghan Dere**.
- 42 Cross the stream in the valley.
- 42½ Enter the narrow valley of the main stream, the **Harmanjyk Su**, and cross to the r. bank of the stream; scrub and some firs.
- 44½ Track crosses to l. bank and recrosses after about 1 mile. The valley widens.
- 45½ Stone bridge to r.
- 46½ **Emirler** village. Track leaves the valley and descends very gradually.
- 48½ **Göljök** ¼ mile to l.
- 52 **Dere Kõi** village. Track now runs NE. across the level.
- 53½ **Tepejikõi**.
- 55 **Tavshanly**, alt. 2,765 ft.

## ROUTE 84

## HARMANJYK—TAVSHANLY, 25 miles

The first 18 miles of this route are fit only for pack-transport. The last 7 are fit for carts, but the road is bad.

Supplies are generally scarce. Water is abundant from streams and springs, and the country is well wooded, mainly with pines, which, however, have suffered considerably from forest fires.

An alternative track runs almost due E. from Balusera (mile 2½) across broken sandstone hills covered with pine forest, to join the Brussa-Kutahia route at Eshen Kõi (see Route 85, mile 47½).

- 0 **Harmanjyk**, alt. 2,215 ft. Track runs E. by N. along a valley.
- 1½ **Harmanjyk Mahallesi** 200 yds. to l.
- 2 Track bends to r. (SE.).

miles	
2½	<b>Balusera</b> village of log huts. Gradual ascent.
5½	Summit ; wide view of forest ridges to SE.
7½	<b>Arslanlar</b> village ½ mile to l.
8½	Cross a stream-bed in the valley.
9½	Reach another summit and descend to a stream.
10	Turn l. up the stream. The valley is long and straight, and is called <b>Uzun Dere</b> . It runs directly SE. Gradual ascent through forest thinned by fires.
12¾	Guard-house about the middle of the valley.
14	<b>Sary Kaya</b> , rocky crag to r. The forest becomes less dense, and patches of cultivation appear.
15½	Summit ; small square turbe ; some large pines. Fine view across the valley of the Tavshanly Chai.
	Track now enters rather bare but cultivated upland plateau.
16½	<b>Yeniköi</b> ½ mile to r. in a fine clump of large trees.
18	Spring. <b>Köprüjik</b> 1½ mile to l. About here the track joins the route from Brussa to Kutahia via Kelles (see Route 85, mile 57).
25	<b>Tavshanly</b> , alt. 2,765 ft.

## ROUTE 85

### BRUSSA—KUTAHIA

#### *Via KELLEs*, 86 miles

The first 10½ miles of the route described here do not belong to the usual pack-route to Kutahia. The latter runs almost due S. from Brussa via Almatzikur and Karakly, meeting the route detailed here some distance W. of Kerasly Yaila (see mile 9 below). There is, however, no further information regarding it for this stage.

From mile 10½ the track here detailed is the regular pack-route. It is evidently unfit for wheels as far as mile 58½,

where it joins the cart-track from the Dagardy mines. From this point it is probably passable for wheels, though difficult.

Supplies are generally scanty except in the valley plains. A fair amount should be obtainable between mile 37 and mile 40½, and in the neighbourhood of Tavshanly and Kutahia. There is a fair amount of timber, mainly pines, throughout, and oak or other scrub for fuel is to be found nearly everywhere. Water is abundant throughout.

miles

0

**Brussa**, alt. 590 ft.

1

Cross the **Gök Dere** at the outskirts of the town. Track now ascends the steep mountain-slopes in zigzags on the E. side of the stream valley, at first through cultivation, and then through forest. Higher up are oak scrub and bracken. The village of Almatzikur is seen to S. on the other side of the **Gök Dere**. It lies on a mountain terrace and is inhabited by Muhajirs from Batum.

4

**Kady Yaila**, alt. 3,970 ft., small terrace (2 hrs. from Brussa). Scattered firs and a few small pines begin here.

5

The fir woods now become thicker; ascent steeper, over granite.

6½

Reach a plateau, the first part of which is called **Saralan**, alt. about 5,250 ft. The plateau stretches SE., rising very gradually. It is dominated on the SW. by the northern end of the main ridge of the mountain, which rises gradually from that end to a height of 6,890 ft. and runs SE. at about that height for a considerable distance towards the topmost peaks.

Track now turns SSW. along the western slope. The ground here also is a kind of terrace sloping gently to the **Gök Dere**. It is dotted with scattered firs.

9

**Kerasly Yaila**, small pasture-ground. Some distance on the track turns W.

miles

10½

Cross the saddle, alt. 4,520 ft., between the headwaters of the Gök Dere and the tributaries of the Ülfer Chai. The watershed lies under the granite scarp which runs SE., forming the southern wall of the mountain. Here the present track meets the pack-route (see introduction, above). The fir woods now come to an end.

Track descends gradually over easy slopes round the upper end of the **Muraslar** valley; scattered firs and beeches among the bracken here.

14½

**Baghly** village on a low terrace to r., alt. 3,050 ft.

Track continues over spurs and terraces and across the numerous valleys which run down from the mountain; to l. at a short distance is the towering rock-wall, its lower part covered here and there with firs; along the track are oak scrub and firs.

15½

**Yahanjyr**, Muhajir village to r. Farther down to SSW., near the Ülfer Chai, is **Gunderen**, where there is said to be a strong salt-spring. Track winds in a general SE. direction, crossing many stream valleys.

22½

**Deliler** village, alt. 3,460 ft., on a fertile cultivated terrace. This is crossed, and the track descends across several valleys.

25½

Reach the **Ülfer Chai**, alt. 3,185 ft., and ascend the stream through a narrow valley.

26½

**Barakly** village, composed of two groups of houses. The valley is wider here. Two terraces, about 30 and 150 ft. high respectively, accompany the stream; the valley-walls are 600–700 ft. high. Cross the river, which here is a muddy brown colour. It is used for lumbering.

Track leaves the main stream and ascends S. along a clear tributary; thick oak, beech, and other scrub. The valley widens and becomes easy.

29

**Yöses** village to r. on the l. bank; cultivation and scattered firs.



miles

Ascend gently and cross the watershed, alt. 3,790 ft., between the Ülfer Chai and the Adranos Chai. From here the Ak Dagħ and Simav Dagħ can be seen far to the S.

- 30 **Kelles**, alt. 3,360 ft., fair-sized village in a broad easy valley. A market is held here once a week. The place is under the administration of Brussa.

Ascend a ridge SW.

- 31 **Kabajyk** village on the summit. Cross a stream valley S. and continue across a broad plateau.

- 32½ Descend into a broad valley and ascend it E. **Alfat** village to r.; cultivation here, with scattered pines and junipers. Continue across a flat watershed.

- 34½ Reach the edge of a deep steep-sided valley in which the Adranos Chai flows SW. 1,600 ft. below. A short distance to the E. the river comes through a winding impassable gorge in a WNW. direction. At the point where it bends SW. a stream comes in down a valley from the NE., in which lies the village of Kelemit with vine cultivation.

Track descends S. to the river.

- 37 Cross the **Adranos Chai** by a wooden bridge, alt. 1,725 ft., and ascend an easy slope on the S. side through rye, wheat, and fruit cultivation; 14 villages may be counted here. The district is under the administration of Dumanich.

- 40½ Spring on r. Oaks and pines.

- 42 Summit, alt. 3,330 ft. Coal-seams and traces of chrome are to be seen near here; oaks and pines now more numerous. Farther on the pines become scanty. Track descends into a valley.

- 43 Ascend gradually along the W. slope of the valley in a general S. direction.

- 47½ **Eshen Köi**, alt. 3,250 ft., in a broad valley among pasture and cultivated land. The place is under the nahie of Harmanjyk, 7 or 8 miles distant.

miles

- Track now ascends gently through junipers, pines, and oaks.
- 49 Summit, alt. 3,565 ft. In front the country now stretches in uniform undulations, broken by shallow easy valleys. The vegetation becomes scantier. Track runs SE., crossing the heads of valleys running NE.; district very barren.
- 51 Descend into a large valley running NNE. **Karlier Maden** chrome mines to l. on the E. side of the stream in the valley. The only trees here are stunted pines and junipers.
- 55 **Devrent** village, alt. 3,315 ft., at the head of the valley in a small fertile plain; much rye, opium, and tobacco cultivation. The district is under the jurisdiction of Tavshanly.
- Ascend over a flat hill and descend gently into a large broad valley falling ESE.
- 57 A track comes in on the r. from Harmanjyk (see Route 84, mile 18).
- 58 **Delikli Tash**, rock tomb to l. Other smaller rock tombs farther down the valley.
- 58½ Track now joins the bad cart-road from the Dagardy chrome mines (see Route 77, mile 6). A short distance on the valley narrows and then widens again.
- 62 Valley again narrows, and the track crosses the stream.
- 62½ Enter the broad Tavshanly plain.
- 63 Cross the Adranos Chai, here called Tavshanly Chai, by a wooden bridge, alt. 2,645 ft. The river here is about 25 ft. wide and considerably smaller than at the last point of crossing (mile 37). The plain is flat and well cultivated; few trees; bare low hills to N.
- 63½ **Maimul** village to l. on a hill of white marl; large fountain near the roadside.
- 64 **Tavshanly**, alt. 2,765 ft., on hills at the N. edge of

miles

the plain ; head-quarters of a nahie ; large bazar ; population partly Armenian.

Road now runs ESE., at first over low hills, passing **Chukur Kõi** to l. and ascending gently through juniper and oak scrub.

69 **Kyökümler Boghaz Kahve.** Road here runs through a small narrow valley.

69½ Cross the watershed, alt. 3,675 ft., between the Adranos Chai and Porsuk Chai and descend a valley. The country now is typical of the central Anatolian plateau : grass and shrubs with low junipers ; scattered pines higher up ; cultivation in the hollows.

70½ **Shamelik** village to r. The valley now begins to widen. A sluggish stream crosses and recrosses the road during the next few miles.

73 **Ören Kõi**, alt. 3,365 ft. Enter a large gently undulating cultivated plain bounded on the S. by a range of hills which stretches ESE. to Kutahia ; on the N. lies a plateau at no great height above the plain ; at the foot of the hills to S. is a line of villages.

75 **Köprü Ören** village ; sarcophagus lid here now used as a cattle-trough.

76 **Kyzyljakaya** village ; isolated flat-topped hill, probably the site of an ancient settlement, in the plain. The town of Kutahia is now visible in the distance. On the r. the stream-bed gradually reaches a depth of 60-70 ft. The road makes a bend N. to round a large marsh lying in a flat valley from the N.

79 Hot springs of **Yonjaly** on the E. side of the valley. They overflow into the marsh. Some of them are used for bathing. From the springs a track runs S. to Enne village and thence, crossing the stream by a wooden bridge, to Jivili and across the plain to Kutahia.

Road ascends a low rise SE. and then turns ENE.

miles

81½

A track comes in on the l. from Brussa via Inegöl (see Route 86, mile 86½).

Road now descends across the **Felend Chai**, a tributary of the Porsuk Chai, into the well-cultivated plain of Kutahia. In the plain several villages and two tumuli are passed.

86

**Kutahia**, alt. 3,070 ft.

## ROUTE 86

### BRUSSA—KUTAHIA

*Via INEGÖL*, 91½ miles

As far as Inegöl (mile 29) this route is a chaussée. From Hammamly (mile 34) to Dumanich (mile 55½) a chaussée was in process of construction in 1901, but was apparently unfit then for wheeled traffic. Beyond Dumanich there is nothing but a horse-track until within a few miles of Kutahia.

Supplies are fairly plentiful except between miles 41 and 49, and again between miles 58½ and 70. Water is generally abundant from streams. After the plain of Brussa is left there does not appear to be much timber till about mile 41, beyond which point there are fine woods of beech and pine till about mile 50, when vegetation becomes scantier. For the last 15 miles to Kutahia the hills are bare except for a few poplars and willows.

It should be noted that syphilis is extraordinarily prevalent in the neighbourhood of Dumanich (mile 55½).

0 **Brussa**, alt. 590 ft. For the first 8½ miles see Route 65.

8½ Present route turns to r. from the Iznik road and ascends steeply up a narrow ravine, the **Uluja Boghaz**. On the r. is the Kara Burun, an outlier of Mt. Olympus, on the l. a hill of rather lower elevation. This pass was reported in 1880 to be merely a water-

miles

course, full of large loose rocks. In that year the ascent became easier after about 300 or 400 yds., though it was still rough and steep in places till the summit was reached, about 800 ft. above the valley.

There is a track on a higher level which avoids this pass. It was reported in 1880 to be unfit for wheels.

Beyond the pass the road runs parallel to the steep slope of the mountain. In front lies a rather bare undulating landscape, 1,100–1,200 ft. high.

14½

Short steep descent to **Aksu**, Turkish village of about 70 houses in a ravine; a stream of the same name flows in a deep channel through the village. The stream is crossed just before entering the village by a bridge, which was reported in 1880 to be in fair condition. It consisted of 2 wooden spans, each 24 ft. long, springing from stone piers.

Track ascends SE. by a winding road; steep rise for 180 yds.; good surface.

18

Summit and watershed, alt. 1,685 ft. The streams in front flow to the Sakaria.

19

Bottom of hill. Road continues over undulating country sloping towards Inegöl.

26

Ground now marshy.

29

**Inegöl**, alt. 860 ft., head-quarters of a nahie; the town lies on a low hill in the middle of the plain. Pop. about 1,000. The flat ground and part of the neighbouring slopes are cultivated, mainly with corn and maize; some trees. The plain is marshy and unhealthy. Several streams cross NE. to join a river which flows NW. along the foot of the hills on the E. side and at the N. side of the plain bends NE. as the Gökche Su to join the Sakaria.

From Inegöl a road runs to Yenishehir. It crosses the Gökche Su at **Hamza Bey Köi** (2½ miles), where the river leaves the plain, and ascends over the low

miles

bare hills which separate the Inegöl district from that of Yenishehir. On the N. side of the hills it passes **Oku** village (10½ miles) and **Ayas** village (12 miles). Here it recrosses to the l. bank of the river by a bridge and then runs NE. across marshy plain to **Yenishehir** (18 miles).

The chaussée to Eskishehir (Route 89) branches to l.

Route becomes a track and continues SE. across the plain.

- 33 **Orta Köi** at the edge of the plain. There is a Seljuk khan here. The walls are built of tiles and stones. The entrance is on the S. side, and the roof is supported on low pillars.

Direction now E. for some distance along the foot of the hill.

- 34 Cross the **Mursal Su**. **Hammanly** village on the r. bank among mulberry and vine cultivation.

Route now turns SSE. up the broad valley of the Mursal Su, following the line of a chaussée which was being made in 1901. This road is badly engineered and constructed, and has destroyed the old pack-route without replacing it by a road fit for wheels. It is not known whether it has been improved recently.

- 39 **Hajikara**, Circassian village to r.

- 41 **Takhta Köprü**, Muhajir village, alt. 1,820 ft. Oinat Cheshme, mineral spring on the hill-slope about 3 miles W.

Road now leaves the forehills and ascends fairly steeply in a general S. direction up the slopes of the Dumanich Dag; fine beech woods now begin.

- 41½ **Baghche Kaya**, Muhajir village about 1 mile W.

- 44½ **Arabolurak Yaila**. Ruins of a Byzantine church here and remains of other walls, perhaps part of

miles

a monastery. In 1901 the stones were being used for making the road.

Route continues up and down over stream valleys.  
48 Summit, alt. 4,740 ft. Descent begins, still through woods. Pines now appear among the beeches, and the forest becomes more open. At a height of about 3,300 ft. the beeches give place to oaks.

49 **Tsefa Kōi**, small village. Direction now SSW. down a valley.

50½ The forest now comes to an end, and the route enters the open country surrounding Dumanich. Cultivated foothills lie along the mountain-foot, and in front of them lies a low undulating plateau, with few trees, broken by broad easy valleys. To the S. the plateau is dominated by a terrace 600–700 ft. high. The district is fertile and supports numerous villages. The forest country on the N. is called Balkan.

Road runs SW. along the foothills.

55½ **Dumanich** (or Assar Kōi), alt. 2,940 ft., on an outlier overlooking the plain; the place is the head-quarters of a nahie. Mediaeval ruins here. In 1901 syphilis was frightfully prevalent throughout the whole of this district. It was said that 90 per cent. of the population were infected with the disease.

At Dumanich the new road comes to an end. Track now runs SSE. across low undulations; fine crops of corn and opium.

57½ Direction now E. for some distance.

58½ **Ilijaksu** village. Strong springs here, the overflow from which form a large tributary flowing W. to the Adranos Chai.

Track turns S. by E. and ascends the slope on to the terrace mentioned under mile 50½.

60½ Reach the flat table-land, alt. 3,410 ft.

61½ Descend into a valley running W.

62½ Cross the stream in the valley; **Haji Akhmed**

miles

- Chiftlik** on the l. bank, alt. 2,650 ft. General direction changes to SE. Track ascends along a ridge. Oak scrub and scattered pines now become scantier.
- 66½ **Arifler**, Yürük village, alt. 3,975 ft. Here the sanjak of Kutahia is entered.  
Track descends into another valley system; stunted pines and junipers here.
- 69½ Cross the **Hesar Dere**, the water of which flows W. to the Adranos Chai, alt. 3,300 ft.  
Track ascends the slope on the S.
- 71½ Summit; tumulus on r. Descend into the valley of a tributary of the Hesar Dere.
- 72½ **Eirös**, small village of Ashiret Yürüks, alt. 3,585 ft. Ascend to a plateau, alt. 4,125 ft.; grass and scattered junipers.
- 75 Enter a gently undulating plain lying at a slightly lower elevation than the plateau just crossed.
- 76½ **Kükürt** village on the r. bank of a stream flowing NW. to the Adranos Chai.
- 77 Ascend over a low rise, the watershed between the tributaries of the Adranos Chai and Porsuk Chai, and descend into another smaller plain.
- 79¾ **Aghyzören** village on a stream, alt. 3,535 ft.  
Track now ascends over a hill with bare pasture-land and continues along the undulating well-cultivated slopes which border the large plain of Ören to r.; many villages near the track.
- 85½ Cross a col, alt. 3,470 ft.; and descend to the plain of Kutahia.
- 86¾ The road from Brussa via Kelles comes in on the r. (see Route 85, mile 81½).
- 91½ **Kutahia**, alt. 3,070 ft.



## ROUTE 87

## KUTAHIA—INÖNÜ, 43 miles

This road is a chaussée, but there is no information as to its present condition.

Cultivation along the route is only sporadic, and there is little timber, though apparently a good deal of scrub and pasture-land. Water is plentiful at least as far as mile 26. For the rest of the journey the streams are probably nearly or altogether dry in summer.

miles

0 **Kutahia**, alt. 3,070 ft. Road runs in a straight line NNE. through the plain, at first through gardens and then through corn-land and pasture.

2 Cross the **Felend Chai**, here flowing in two arms round a small hill about 130 ft. high; to N. the plain is bounded by a terrace about 50 ft. high; farther W. is a terrace about 260 ft. in height, and behind it a plateau rising to 650 ft.

3½ Ascend over low spurs.

4½ Bridge to r. called **Ak Köprü** over the **Porsuk Chai**. It is crossed by the T. L. and a road to Eski-shehir (see Route 90).

Present road bends N. by W. down the narrow winding valley of the Porsuk Chai. The local name for the valley is **Besh Deïrmen Boghaz**. The stream runs swiftly through meadow-land about 100 yds. broad at most, and in many places much narrower. On either side are cliffs rising 600–700 ft. Higher upstream there are cereal cultivation and scrub along the river.

7 Direction changes to NNE.

9 Cross the **Haram Dere**, a stream from the NW.

**Besh Deïrmen Chiftlik** to r. on the opposite bank of the Porsuk Chai.

miles

- 10      **Yailajyk** village to r. on the r. bank. The valley-floor is now about 200 yds. broad and cultivated with cereals; irrigation-wheels are to be seen here. Oak and juniper scrub is the only vegetation on the slopes.
- 11½      **Akhmed Oghlu Cheshme**, spring to l. with an ancient relief representing eagles, lions, and snakes; to r. is a kahve.
- 13½      **Akhmed Oghlu Chiftlik** on the r. bank at the mouth of a small tributary. The Porsuk valley here becomes broader.
- 14      Cross a stream (dry at the end of June).
- 16      Cross a stream which comes SE. from a hot spring 2½ miles NW. The place is said to be largely frequented as a bathing-resort.
- 17½      **Akbunar** village on the r. bank. The valley begins to widen out.
- 18½      **Bardakje Köprü**, ruined bridge to r. Lower down the valley broadens still further; terraces accompany the river.
- 22½      Khan belonging to the village of **Sofcha** on the r. bank, alt. 2,855 ft.  
General direction now N.
- 23¼      **Tumulus** to r. Road bends W. for a short distance up a side-valley and then N over a ridge.
- 24½      Summit, alt. 3,215 ft.; to E. the country is seen stretching in the direction of **Eskishehir** as a broad table-land 3,000–3,500 ft. high, with small peaks rising above it and broad easy valleys; to N. is level country bounded by a rounded line of hills rather lower than the **Tutluja Tepe**, which rises behind it to about 4,600 ft. The whole country is bare except where the plains show cereal cultivation.
- 26      Cross a stream, alt. 2,965 ft.; **Sobran** village ½ mile downstream in the valley plain. Ascend over a low rise into a plain stretching far to the W.; in that direction the **Dumanich Dag** can be seen.

miles

• Road runs N. up a stream and over an outlier of the hills bounding the plain on the E. It then continues N., ascending gently.

30 Many windings during the next few miles.

32½ **Tutluja**, Yürük village with good khan, in a cultivated hollow to r. There is said to be almost continually a strong north wind here.

The country generally is bare steppe-land dotted with gently sloping hills covered with parched grass; here and there are small plains with cereal cultivation.

South-east of Tutluja begin the meerschaum deposits for which the neighbourhood of Eskishehir is famous.

Road continues winding up the hill.

35½ Summit, forming a broad watershed, alt. 3,695 ft.; to l. rises the volcanic summit of Tutluja Tepe.

Road now crosses a belt of lava formation and then winds down the slope at the N. edge of the volcanic deposit.

40½ Reach the plain of the **Sary Su**, which runs SE. to join the Porsuk Chai at Eskishehir.

A road branches down the valley to Eskishehir (see Route 89, mile 50).

On the N. side the plain is bounded by the long bare range of the Boz Dagh.

Road turns W. along the foot of the hills.

43 **Inönü**, alt. 2,765 ft., market town about 2 miles S. of the railway station of the same name. The bazar is in the W. part of the town.

The hill behind contains a large cavern and a number of caves artificially cut.

## ROUTE 88

INÖNÜ—INEGÖL, 43 miles

Except for the last few miles this route is a difficult pack-track. It probably follows part of the ancient road between Brussa and Eskişehir now abandoned in favour of the chaussée.

The country traversed is little known, but is fairly well cultivated and finely wooded, and there are streams near the path throughout.

miles

- |                |   |
|----------------|---|
| 0              | <b>Inönü</b> , alt. 2,765 ft. Track runs W. by N. along the S. edge of the plain. The hill terrace to S. sinks from about 1,000 to about 300 ft. ; to N. are low outliers.  |
| $\frac{3}{4}$  | Large spring on l.  |
| 4              | Cross a stream from a small ravine.   |
| $4\frac{1}{2}$ | <b>Kandyly</b> , Muhajir village on a large stream which comes down a ravine from the SW. ; chiftlik near here and ancient ruins. Kara Aghach and Kovelija are two Circassian villages on the hill-slopes to N.<br>Track continues W. by N. across a small cultivated depression.   |
| 5              | Tumulus in the depression to r. Ascend a low rise.  |
| $6\frac{1}{2}$ | Summit and watershed between the Sary Su and Kara Su, alt. 3,130 ft.<br>The steppe-like character of the country disappears; the landscape is now covered with oak scrub.<br>Track descends about 300 ft. into a cultivated valley watered by a river which comes down a narrow ravine from the S. The villages upstream are said to be Circassian. |
| $7\frac{1}{2}$ | <b>Bozalan</b> , Yürük village. The outliers to l. are now 600-700 ft. high.  |
| $8\frac{3}{4}$ | <b>Bashdeirmen</b> , strong spring of clear water on the l. bank, the overflow from which drives several mills.   |

miles

Below this point the river is called Kara Su, and here it breaks N. through another ravine into the plain of Bozöyük.

Track crosses the river and ascends W. over the hills.

9 $\frac{3}{4}$ 

Cross a valley and ascend over a ridge into another valley; both run N. to the Kara Su (streams dry at the end of June).

10

**Kapanalan**, Yürük village on l.

Track descends the valley for some distance; thick oak scrub here.

11 $\frac{1}{4}$ 

**Chaidere** village. Track again bends W. up a ridge.

12

Summit, alt. 3,060 ft. Descent into a valley in which are a spring and mediaeval ruins.

13

**Kyzylja Bunar**, alt. 2,565 ft., village of Ashiret Yürüks.

Track runs W. up another larger valley; irrigated cultivation, especially maize; thick oak scrub and scattered pines on the slopes; a terrace about 300 ft. high accompanies both sides of the valley, and behind rise pine-clad hills.

16

**Muradlar**, Muhajir and Yürük village.

16 $\frac{3}{4}$ 

Broad easy col, alt 2,950 ft.; cultivation.

18

Spring and mediaeval ruins in a broad valley. On the S. a stream comes down a large glen past a mill and turns WNW., followed by the track. The hills close in, but still leave room for cultivation and fine hay-fields.

20

**Tekkedere**, Yürük village, alt. 2,490 ft., at the mouth of a side-valley.

The hills now close in; the slopes are gentle and finely wooded with pines, beeches, and, here and there, firs; beech and other kinds of deciduous scrub form a thick undergrowth; saw-mills along the stream.

22

Track leaves the stream and begins to ascend the

miles

r.-hand slope ; occasional glimpses through the trees of a cultivated terrace on the far slope.

23 $\frac{1}{2}$ 

**Alagün Yailasy.**

25

Summit of ridge ; to r. is a parallel valley, also with cultivated terraces ; the villages are Circassian.

Track continues along the ridge for some distance and then descends again through oak woods into the valley on the l.

28 $\frac{1}{2}$ 

**Osmanli**, Circassian village, alt. 1,445 ft. ; valley still narrow.

Track crosses the stream and follows it downwards between cultivated hills rising 600–700 ft. above the road.

29 $\frac{3}{4}$ 

Recross the stream. **Karaja Kaya**, Turkish and Albanian village at the mouth of a large stream from the Dumanich Dagħ.

30 $\frac{1}{2}$ 

**Rusheje**, Circassian village. The valley here bends N.

31 $\frac{3}{4}$ 

**Yeni Köi**, village of Circassians, Turks, and Muhajirs at the mouth of a large valley from the E., alt. 1,170 ft.

The valley again narrows, breaking through a wooded ridge.

34 $\frac{1}{2}$ 

Cross to l. bank and ascend NW. over the slope ; to r. the stream enters the plain of Inegöl.

35 $\frac{1}{2}$ 

Mineral spring ; the water is exported to Brussa and Constantinople.

36 $\frac{1}{2}$ 

**Chitli** village on the edge of the plain of Inegöl. The plain is cultivated with wheat and maize ; some trees.

37 $\frac{3}{4}$ 

Cross the **Mursal Su** by a bridge.

38 $\frac{3}{4}$ 

Track joins the chaussée which runs between Inegöl and Eskishehir (see Route 89, mile 4 $\frac{1}{4}$ ).

43

**Inegöl**, alt. 860 ft., P. and T. ; fair-sized market town built on a low isolated hill in the plain. The place would appear to have increased considerably in size and importance in the last 10 years. In 1901

miles

it was reported to be the head of a nahie, while in 1914 it was given as the chief place of a kaza (in the Ertoghrlul sanjak of the vilayet of Brussa). The population in 1914 was said to be 16,800. Supplies are plentiful. Trade consists chiefly in cereals, tobacco, raw silk, eggs, grapes, fruit, opium, nuts, sesame, and timber.

## ROUTE 89

### INEGÖL—ESKISHEHIR, 65½ miles

The most recent maps give this road as a chaussée to mile 50. It is passable for arabas throughout, but the going may be heavy in places after rain.

In 1880 it was reported that the track in the ascent over the mountains between miles 11 and 18 could be improved in places by the removal of rocks and the filling up of water-courses, but that this stage would always be a serious obstacle to wheeled transport and artillery. The descent from the summit is steep in places at first, then easier over earth 50–60 yds. wide.

Supplies should be fairly plentiful except on the stage over the hills between the Inegöl plain and Bozöyük (mile 36½). There is also a fair amount of timber to some distance beyond Bozöyük, after which woods give way to scrub.

- |    |  |
|----|--|
| 0  | <b>Inegöl</b> , alt. 860 ft. Road runs ESE. across fertile plain; going very bad in wet weather.                                   |
| 4½ | <b>Kulajak</b> village lies near here. A track from İnönü comes in on the r. (see Route 88, mile 38½).                             |
|    | Road bends more to the S., keeping along the E. side of the gradually narrowing plain. Several villages at the foot of the slopes. |
| 10 | <b>Kurshunlu</b> , Turkish village of about 1,000 inhabit-   |

miles

ants, alt. 1,020 ft.; ruins of an old stone khan and a fine mosque.

- 11 Cross a stream (the **Domuz Chai**) and reach the foot of the hills; road bends NE. and ascends, at first through scrub and undergrowth; higher up are fine trees, mainly oaks and beeches, with many pines on the E. side.

- 17 Guard-house; fine view W. to the plain and Mt. Olympus; fine growth of partly wild fruit-trees round the guard-house. There are said to be many deer in the forest on the mountain, as well as panthers, bears, wolves, and jackals.

- 18 Second guard-house, alt. 3,020 ft.; quick descent along the ridge of a spur between two deep thickly wooded valleys.

- 22 Reach the foot of the mountain; the forest comes to an end. In front is a plain broken by several transverse valleys, draining northwards in the direction of Bilejik to join the Sakaria. The general level of the plain is about 2,300 ft.

- 22½ **Deve Tash**, ruins of a Roman building.

- 23½ Second larger ruin-field.

- 25 Pass a third ruin-field and enter **Bazariyk**. The place is situated on slightly rising ground, rocky and bare of trees. It was formerly called Ermeni Bazariyk, but there are now no Armenian inhabitants. The population numbers about 600, almost all Turks.

Road now runs over bare almost level plain, crossing shallow stream valleys.

- 29½ View opens suddenly down into a deep valley between hills, in which lies **Kara Kõi**.

Road descends fairly steeply, leaving the village to l., and joining a road which comes in on the l. from Bilejik runs S. up a narrow ravine shut in on both sides by wooded hills. The stream in the gorge is



miles

called **Kara Su**, and the ravine itself **Kara Su Boghaz**. The road is level but is probably rough and rocky in places.

32 Cross to r. bank of the stream by a bridge.

33½ Road emerges from the gorge, which here opens into a broad valley. Direction changes to SE.

A track branches to r. to Kutahia.

The road is now good and level ; the hills become less wooded.

36½ **Bozüyük**, Turkish village of about 200 huts, alt. 2,185 ft. The place is the seat of a mudir. In front of the village is a small mound. Behind it rise bare mountain-slopes broken by ravines and caves.

Road continues up the valley, ascending gently. The valley is about 1 mile wide, bordered by low brushwood-covered hills.

38½ Present route bends to r. from the direct road to Eskişehir, and crossing the plain ascends gradually up a side-valley. The slopes to r. are covered with scrub and timber ; in front and to E. the hills are bare.

39 Pass a tumulus and, some distance farther on, a Circassian village.

43½ Summit, alt. 2,600 ft. ; view opens into a broad well-cultivated valley running E. to W.

Road descends very gradually and crosses the valley ; general level of valley about 2,500 ft.

47½ **Inönü**, alt. 2,765 ft. Road now runs E. along the foot of the hills, coinciding for some distance with the end of Route 87.

50 Road to Kutahia branches to r. through the hills (see Route 87, mile 40½).

52½ Tumulus.

53½ Circassian village.

54 Cross the **Sary Su**.

55½ **Chukur Hissar**, poor village of 30 huts at the foot of a small peak about 100 ft. high ; spring.

miles

- Here the direct road from Bozöyük to Eskişehir (see above, mile 38½) comes in on the l. The valley is now about 6 miles wide and bordered on the N. by gentle slopes.
- 61     **Sügütönü** village. A road here comes in from Sügüt about 23 miles NW.
- 65½     Chaussée continues over spurs from the hills to N. Cross the **Porsuk Chai** by a bridge and enter **Eskişehir**.

## ROUTE 90

## KUTAHIA—ESKISHEHIR, 39 miles

The route here detailed is the main road between Kutahia and Eskişehir. It appears to be unmetalled from mile 4½ but is passable for carts. Most of the country traversed is bare plateau, and supplies are scarce except near Kutahia and Eskişehir.

The distances given below are taken from the route-map of the main authority consulted. More recent maps make the distance some miles longer.

- 0     **Kutahia**. For the first 4½ miles see Route 87.
- 4½     A road to İnönü branches to l. down the Porsuk Chai (see Route 87, mile 4½).
- Present route crosses the river by the **Ak Köprü**, alt. 3,230 ft. About 1 mile upstream on the r. bank, a little above the junction of the Felend Chai with the main river, lies **Boznak Köi**, a well-built village with some two-storied houses inhabited by refugees from Bosnia. Road ascends out of the valley.
- 5½     Summit, alt. 3,885 ft. Road runs NE. over gently undulating barren plateau.
- 9½     Descend into a stream valley.
- 9½     **Seidi Köi**, alt. 3,655 ft.
- 11½     Rock tombs to l.

miles

- 13      **Muh Kõi**, Muhajir village. Road ascends NNE. over a ridge and descends into a stream valley, keeping the stream on the r.
- 16      **Kumlu Derbend**, alt. 3,195 ft.
- 17      **Kabajy Chiftlik**.
- 17½      Cross the Porsuk Chai by a fine Roman bridge, alt. 3,060 ft. Road runs NE., still through bare country; herds of Angora goats are to be seen.
- 20½      **Chanak Kiran Derbend**. Three streams running to the Porsuk Chai are crossed in the next 2 miles.
- 25½      Road descends into the Mussöisin Dere.
- 26½      **Mussöisin** village to l.
- 29      **Muh Kõi**, Muhajir village. Road bends SE., skirting a spur, rounding which it again turns NE.
- 31      Cross the Porsuk Chai by a wooden bridge. Road runs NNW. down the river.
- 32      Hill to r. rising about 350 ft. above the river. On the summit is an ancient fortress, locally called Karaja Shehir. Road rounds the hill and turns NE., following the river.
- 39      **Eskishehir**.

## ROUTE 91

SOMA—GELEMBE, 15½ miles

This route forms the first stage of what used to be an important caravan-road from Soma to Balikesr. Supplies are plentiful, and water is abundant throughout from springs or streams, though some of the latter may dry up in summer. There is no information as to timber.

- 0      **Soma**. Road runs NE.
- 1½      Bridge across the **Bakyr Chai** to Soma railway station, alt. 410 ft. Route now follows a track E. over undulating ground.

miles

4

**Gertze** village about  $1\frac{1}{4}$  mile from the river, from which it is separated by an isolated limestone hill. To N. is a smaller flat-topped hill. Near the modern village is the site of an ancient settlement which commanded the pass between Soma and Gelembe.

Track now runs SE. over low foothills and then turns E. again.

7

Spring on l.; to r. are other springs in the plain known as the sources of the Bakyr Chai.

Track continues over a low spur past the villages of **Chavdyr** and **Musakhojaly** and then across the fertile plain.

9½

Cross a tributary of the Bakyr Chai; stream dry in summer.

11

**Yagniurlu** village.

Track ascends over the ridge which separates the plain of Kyrkaghach from that of Gelembe; easy hill country to N.

11¾

Summit, alt. 1,085 ft. To r. is an oval-shaped summit bare except for a few trees. It rises about 330 ft. higher than the point here reached, and is the site of the ancient city of Stratonike.

13½

**Geibeler** village on a spur; fine view over the plain of Gelembe.

15

Cross the Bakyr Chai.

15½

**Gelembe**, alt. 755 ft., small town on a low hill in the plain. The houses are old and built close together. The population is composed partly of Greeks, partly of Turks. There are no separate quarters for the two racial elements.

There is a large amount of madder grown here, but the dye industry has suffered through the development of aniline dyes.

## ROUTE 92

## BIGADICH—KYRKĀGHACH, 37 miles

The greater part of this route is unfit for wheeled traffic. From about mile  $3\frac{1}{2}$  to mile 18 the country is generally bare, covered largely with rocks and scrub, and supplies are scanty. South of Chobanlar (mile  $18\frac{1}{2}$ ) there is extensive fruit cultivation, but cereals appear to be little grown.

miles

- |                 |  |
|-----------------|--|
| 0               | <b>Bigadich.</b> Track runs SW. across the plain.  |
| $1\frac{1}{2}$  | <b>Balaklu</b> village $1\frac{1}{2}$ mile to l.   |
| $3\frac{1}{2}$  | Ford the <b>Simav Chai</b> at the SW. corner of the plain.<br>The river here emerges from a narrow gorge on the S.<br>Track begins to ascend S. up the r. bank of a tributary stream, passing <b>Chekerdek</b> 2 miles to r. on the hill-side. Track becomes worse; nothing along the route but rocks and scrub. |
| $5\frac{1}{2}$  | Ford the stream, which here forks. Track ascends the r.-hand branch; bad going.  |
| 7               | Reach a small plain; view E. to the Kurtal Dagh, a rugged jagged mountain, with the Sidan Dagh behind it.  |
| 8               | <b>Göljükdam</b> , small village at the end of the plain. Track ascends to a summit.   |
| $9\frac{1}{2}$  | <b>Göljük</b> village beside a shallow lake of the same name. The lake is dry in autumn. Water is brought to the village from a distance of several miles.<br>Track crosses another small plain and ascends again.   |
| 11              | View back to the Simav Chai valley and the Egrigöz Dagh in the distance. Track again descends, and then follows a valley which comes down from the S.; bare rolling hill country.  |
| $12\frac{1}{4}$ | Cross a summit.  |
| $13\frac{1}{4}$ | Cross another summit, a fairly level ridge furrowed by several streams. The Kyrkaghach Dagh stands on  |

miles

the SW. horizon, the Egrigöz Dagħ NE., and the Uluz Dagħ behind to the N.

16 Guard-house.

16½ Yürük encampment.

17 Cross the watershed into the basin of the Bakyr Chai.

18½ **Chobanlar** village, well up above a valley which runs down to Gelembe.

19½ A track which seems to be a regular caravan-route comes in here from Balikesr over a low easy pass.

The present route bends SSW. and in the next few miles crosses several streams, tributaries of the Gelembe Chai. The main stream comes down a valley from the N. and here and there where the hills close in forms cascades.

23½ Track descends into the Gelembe Chai valley.

24½ **Saralyk Su** spring, said to have medicinal qualities, to r.

**Kinik** village ½ mile farther NE. The whole country is covered with low scrub.

25½ **Gelembe** (see Route 91, mile 15½).

From Gelembe two tracks run southwards to **Gördük Kale** in the **Gördük Chai** (Lykos) valley. (1) The western branch is the broader. It runs past **Karamanlar** and over a low eastern spur of the **Kady Dagħ**, leaving a group of hills called **Karakurt** on the r. (2) The other track is more direct. It runs across the western spurs of the **Kar Dagħ**. Beyond **Gördük Kale** the valley may be followed to **Ak Hissar**.

Present route follows the Soma road for the next 3½ miles (see Route 91, miles 15½–11½).

29½ Present route leaves the Soma road and strikes SW. Ruins of **Stratonike** on a hill to l.

34½ Cross the **Bakyr Chai** (very little water in autumn).

37 **Kyrkaghach**.

## ROUTE 93

## AK HISSAR—KULA, 79 miles

There is a post-road from Ak Hissar to Gördiz (mile 37), but no details are available for its first stage. The present route joins it at mile 19½ and follows it to Gördiz. Beyond Gördiz there is very little information for over 20 miles, and the distances and directions over this stage must be regarded as only approximate.

The track is apparently unmetalled throughout, but the country as far as Gördiz is generally easy and fairly well cultivated. There is a fairly good supply of water from springs or streams. Some of the latter, however, are dry in late summer. Timber and scrub are generally plentiful. Beyond Gördiz supplies are probably scanty, but apparently there is a fair amount of timber and fuel.

miles	
0	<b>Ak Hissar</b> , alt. 360 ft. Track runs NE. across the plain not far from the r. bank of a stream.
3½	Reach the foothills; some mills here. Track ascends E. along a ridge between two valleys; cultivation, pines, and scrub.
10	Spring on r. Track ascends through pine forest.
11½	Reach the undulating plateau of <b>Görenes Alan</b> , alt. 2,415 ft.; some cultivation and nomad encampments here. To N. the two broad limestone ridges of the Görenes Dagh rise to about 3,300 and 4,000 ft. respectively. Track runs through barley and opium fields and among pines and junipers.
12½	Summit, alt. 2,570 ft. In front lies an extensive upland broken by valleys running S., and dominated by the precipitous volcanic summits of Shahankaya and Sivri Tepe.
	Track continues over a saddle on to a scrub-covered plateau about the level of the summit.

miles

- 15½ **Gösek Köi.** Track now descends S. for some distance.
- 17 **Yagyrdy** village, alt. 1,485 ft., in a hilly depression. Track now runs E. through fertile undulating park country dotted with trees and cultivated with cereals and opium.
- 19 Cross the **Gürje Chai**, alt. 1,110 ft.
- 19½ Cross the **Kayajyk Chai**, which joins the Gürje Chai a short distance SW. Both are strong streams. Track now follows the post-road from Ak Hissar, ascending the valley of the Kayajyk Chai. To r. rise the precipitous walls of Shahankaya, a bare rock-mass, alt. 3,150 ft., broken into rough pillars, which stands out in marked contrast to the surrounding country. Round the main mass rise several smaller peaks and crags. To SW. are ancient walls, perhaps the ruins of the ancient Satala.
- The valley is thickly clothed with pines and valonias and rich in bird life. On the W. side is an elevation with an ancient ruin.
- 22½ Track ascends the hill to r. and rounds the **Kara Tepe**. The latter is well wooded, mainly with chest-nuts.
- 23½ **Edem Effendi Chiftlik.** A little farther on is a spring under giant plane-trees. To N. there is a wide view over the easy hill country.
- 26½ **Kayajyk**, alt. 2,365 ft., large village on picturesque cliffs on the E. side of the Kara Tepe. The population is partly Turk, partly Greek. Two miles to S. is a striking tower of rock called Sivri Kaya. To N. stretches a terrace plateau at the same level as the village, with other plateaus rising behind it.
- Track now runs E. across the plateau at a uniform height of about 2,200 ft. The slopes of the valleys are generally easy, but show frequent land-slides. Here and there are single trees among cultivated fields.



miles

- 29½ Track runs through a ravine with a waterfall and enters the **Kalabak Dere**, a stream valley running SE. to the Kum Chai.
- 31½ Ascend again up the E. side of the valley on to a plateau.
- 33 Enter a broad valley running E. to the Kum Chai. The stream is dry in October.
- 35½ Ascend NE. over a spur into the large valley of the **Kum Chai**. The river winds through a small plain. The lower slopes are gentle and generally cultivated.
- 37 **Gördiz** (anc. Julia Gordus), alt. 1,610 ft., headquarters of a kaza. The town lies along the valley-slope above the Kum Chai, which here is spanned by a wooden bridge. It is noted for its old-established carpet industry. The patterns are now sent largely from Europe, and aniline dyes are commonly used. Gördiz is of no importance as a trade-centre. The Greek population here, like that of Ak Hissar Demirji, Kula, &c., speaks only Turkish.
- Track crosses the Kum Chai (stream dry in October) and runs SSE. over the hills.
- 44 Descend to **Ralyar** village lying in a valley running NNW.
- Direction now SE. The chaussée from Salykhly to Simav is crossed (see Route 97).
- 51 **Desuji Kõi** (? Doganjy Kõi). Track continues through hills, passing **Yumuklar** village to r.
- 59 **Injikler** village. Direction now due S.
- 60½ **Sidas Kale**, ruins of the ancient city of Saittai. Track ascends the ridge to S.
- 61 Tombs and sarcophagi of Saittai on the undulating summit. Track descends S. down a valley. Maddar was formerly grown here.
- 64 Cross the **Aine Chai** (? Ilgi Chai).
- Track now ascends steeply through thick pine woods. From the summit an extensive view is

miles

obtained over the whole district of Kula, and as far as the Boz Dagħ to SW.

Bearings to various of the volcanic peaks are as follows : to that near Kula, S. 10° E. ; near Sandal, S. 26° W. ; Kaplan Alan, S. 63° W.

Track descends by a steep winding path over limestone ; the ground is barren, and covered mainly with stunted oaks and small pines.

68½ Cross the **Gediz Chai**, which here flows in a wide sandy bed about 1,400 ft. below the ridge just crossed.

Track ascends steeply up a ravine. To r. a perpendicular cliff formed by lava from the Sandal crater can be seen not far from the river.

71 Ascent becomes easier. On the summit of the ridge are a few volcanic caves. Track then descends through country generally barren, with a little oak scrub, thorns, and wild pears, and here and there patches of cereal cultivation.

74½ **Bakr Göl** to l.

75 **Gölde** village ½ mile to r.

79 **Kula**.

## ROUTE 94

MANISA—MERMERE, 34 miles

This is not a metalled road, but the country traversed is easy and should be passable for wheels in dry weather.

Supplies are fairly plentiful except for the last 9 or 10 miles.

0 **Manisa**, alt. 230 ft. Road runs E. along the foot of the hills (see Route 138).

2 Present route branches to l. from Route 138.

2½ Cross the railway and turn E.

3½ Ford a small stream and then cross the **Nif Chai** by

miles

a wooden bridge ; vine cultivation in the plain. Road makes a détour to cross an old branch of the river ; fine meadows here and fields of broad beans.

6 $\frac{1}{4}$  Direction now NE. across the plain.

7 $\frac{1}{2}$  Ferry across the **Gediz Chai**, alt. 125 ft.

8 $\frac{1}{4}$  **Harmandaly** village. Road now runs across pasture-land.

12 $\frac{3}{4}$  **Munteveli**, Greek village at the foot of the hills ; another Greek village, **Koldere**, lies 2 $\frac{1}{2}$  miles to S. Springs rise at the foot of the hill and water gardens. Road crosses low undulations.

14 $\frac{3}{4}$  Direction changes to E. along the foot of the hills ; extensive fields of cereals and vetches.

16 $\frac{1}{2}$  Spring ; **Yeni Chiftlik**  $\frac{3}{4}$  mile to r. on the hill among vine cultivation.

17 $\frac{1}{4}$  Road turns ESE. and ascends the hill.

19 **Papasly**, alt. 550 ft., large Christian village at the foot of a round hill ; vine and tobacco cultivation on the slopes, cereals in the plain.

Road runs E. and descends to the plain ; several small **Yürük** villages on the slopes.

21 $\frac{1}{2}$  **Alibey**, small Turkish village at the foot of the hills ; a fair amount of vegetation on the slopes. The plain is cultivated largely with tobacco and is broken up by trees and hedges.

24 $\frac{1}{2}$  Cross a stream-bed which runs WNW. to the **Kum Chai**.

25 Ascend ENE. and then NE. up the hills. **Gyr Dagħ** to l., **Yalym Dagħ** to r. Oak scrub, cistus, and small pines on all sides.

27 $\frac{1}{2}$  Summit, alt. 880 ft.

Descend into a valley, passing, to r., a mine from which sulphur-lead ore used to be extracted.

29 $\frac{1}{4}$  Direction changes to ESE. over dunes. Some opium cultivation now breaks the monotony of the scrub.

miles

- 31½ Cross a valley about 200 ft. above the level of the plain and cross the last broad spur.
- 34 **Mermere**, alt. 365 ft., fairly important market town on the edge of the plain; population partly Turkish, partly Greek; Circassian colony some distance to W.

## ROUTE 95

KASSABA—SALYKHLI, 25½ miles

There is no recent information for the details of this route. The road is passable for wheeled traffic in summer, and supplies are plentiful throughout. Water is scarce in summer.

- 0 **Kassaba**, alt. 235 ft. Road runs E. along the foot of the hills.
- 2 Two springs, one to r. and one to l.
- 3 Guard-house in a cluster of poplars; spring to l.
- 3½ **Derbend Kōi** on the hill-slope to r. among rocks. Road continues E. through cultivated land.
- 4½ Cross a broad stream-bed; shrubs along the banks. Beyond the stream is a wood of birches, the tree-trunks covered with vines. Then comes pasture-land; the ground sinks gradually towards the Gediz Chai.
- 6½ Cross another stream and pass a guard-house; several tumuli to r. between the road and the hills.
- 7½ **Urghanly** village to l. in the plain, beyond the railway. Road draws nearer to the hills; brick ruins to l.
- 9 Spring and ruins.
- 9½ Three tumuli.
- 10½ Cross a dam or wall which winds from the hills to the river, and then descend into a watercourse; two tumuli to r. Farther on there are seven tumuli near

miles

- one another on the r. and on the l. ; ancient ruins and poplar groves here.
- 14      Direction changes from E. to ESE. ; road passes a spring, then a mound, and then a second spring.
- 15      The citadel of Sardis comes in sight.
- 16      Pass a mound to l. and another some distance away to r. ; road then crosses a wall from the hill to r.
- 18½      Cross the **Sart Chai** (not dry at the end of July) ; ruins of Sardis to r. partly in the plain, partly on a steep hill between the Sart Chai and Tabak Chai, on which lay the citadel of the ancient town.
- 20      **Chaltylyk**, small Yürük village to r. beside a mill. The ground here is marshy.
- 20½      Cross the **Tabak Chai**, a larger stream than the Sart Chai. On the E. side of the valley about 2 miles S. of Chaltylyk is a hot sulphur spring and bathing-resort called **Ilija Chamurluk**. Fine maquis vegetation, pines and olives on the steep valley-slopes.
- 22½      Cross the **Deli Chai**.
- 25½      **Salykhly**, alt. 265 ft.

## ROUTE 96

SALYKHLI—AK HISSAR, 37½ miles

This route is simply a track, but it should be passable for wheels in dry weather. Forage and fodder are generally plentiful, and there is sufficient water from streams or springs.

- 0      **Salykhly**, alt. 265 ft. There are probably several tracks leading NW. across the plain. Several streams have to be crossed.
- 8½      Ford the **Gediz Chai**. The river here is about 250 paces broad. The current is gentle, and the depth (in November) nowhere more than 3 ft.

miles

10½

Reach the foot of the hills on which lay the necropolis of Sardis; cultivation on the slopes.

12

Tumuli to r. and l.

13¼

**Tepe Köi**, small Yürük village. The name given to the whole of the area round about is **Bin Tepe** ('Thousand Hills'), from the innumerable large and small grave-mounds which dot its surface. The soil is covered with a growth of coarse grasses and prickly shrubs, which give the landscape a dreary monotonous appearance.

From the summit of the highest mounds a wide view is obtained. Immediately below to NE. lies the Mermere Göl, a shallow lake fringed with reeds and bordered on the NE. side by hills rising steeply from the water. The lake has no outlet and is fed on the SW. side by the overflow from two springs which rise on the hill-slope, at the W. end by the drainage from a broad valley depression called Ganboghazy, on the N. by the drainage of a similar valley, and on the E. by a branch from the Gediz Chai. Beyond the lake is the high land of Gördiz, dominated in the distance by the Görenes Dag, Shahankaya, and the cloud-capped Kalem Dag. To E. the narrow valley by which the Gediz Chai enters the plain is seen, and beyond it several small dark conical peaks in the volcanic district of Kula. To S. are the long plain of the Gediz Chai and the broad wall of the hills, with their summits hidden by clouds. To W. the Manisa Dag is visible, while to NW. is the undulating hill country of which Bin Tepe forms the south-eastern extremity, broken on the NW. side by a broad valley plain and falling on the E. side to the plain of Mermere.

Track descends NE. past the more northerly of the two springs above mentioned and then NW. along the shore of the Mermere Göl. The lake is salt and

miles

is said to contain large numbers of fish. Fishing is carried on by Cossacks (possibly from the Manyas Göl), and in winter the lake is the resort of innumerable waterfowl, including wild swans. The water-level is about 240 ft. above the sea.

To l. the low hills are covered partly with camel-pasture, partly with cereal cultivation.

17 Cross the stream which comes down the Ganbog-hazy. Direction changes to N.

19 Ruins to l. at the foot of the hills.

20½ Track passes between an isolated hill and the lower slopes of the Yalym Dag and turns NW.

22½ **Mermere** (see Route 94, mile 34).

Direction now N. across the plain.

24¼ Tumulus to l.

26 Cross the **Kum Chai**, alt. 330 ft. The stream flows in several channels.

Track now skirts the hills on the r.

26½ About here a track from Kula comes in on the r. (see Route 102, mile 50).

27 Large spring at the foot of the hill. The overflow forms a strong stream. The large village of **Selendi** lies 2 miles to W. in the fertile plain among cereal, vine, and opium cultivation; many poplar-trees.

29 Tumulus to r. near the hills, which here recede towards the E. Direction changes to NNW.

30¼ Tumulus on l.

31 Cross the **Ylanjyk Chai**, which comes down a valley from the NE. On a crag on the N. side of the valley about 3 miles distant is a tower called Ylanjyk Kale.

Track again approaches the hills.

32¼ Cross a stream.

32½ **Kenes** village. A short distance beyond it is a spring used for irrigating gardens.

35 Tumulus to l. and beyond it an isolated hill called Kara Öyük.

miles

- 36 $\frac{1}{4}$  Cross a spur ; some ancient stones to l.
- 37 Ascend over a second spur ; numerous windmills on the hill ; fine view over the town and plain of Ak Hissar. Track descends gently through gardens past Moslem cemeteries.
- 37 $\frac{1}{2}$  Ak Hissar, alt. 360 ft.

## ROUTE 97

SALYKHLY—SIMAV, 79 miles

This road is marked on the maps as a *chaussée*. It was incomplete in 1901. Supplies are probably scanty after the first few miles. The country along the route is generally well wooded. The water in some of the wells between Salykhly and Borla is bad and liable to produce fever.

- 0 Salykhly, alt. 265 ft. Road runs NNE. across the plain.
- 1 Cross the **Alashehir Chai** by a bridge ; little water in the river in July. Road now bends in a general NE. direction through pasture and cultivated land ; crops reaped before the end of July ; several villages and wells. The ground is marshy in wet weather.
- 5 $\frac{1}{2}$  Low spur 60–70 ft. high on the r. ; cultivation on the slopes.
- 7 $\frac{1}{2}$  **Besiyally Chiftlik** on r. Cross an irrigation-cut which brings water for gardens from the Gediz Chai. After some distance the road makes a bend round to NNW.
- 10 **Adala**, alt. 395 ft., to l. on the r. bank of the Gediz Chai ; head-quarters of a *nahie* ; pop. about 1,500. In early Turkish times Adala was a place of some importance, with strong fortifications, which are now in ruins.
- The road now continues up the l. bank of the **Gediz Chai** ; many *valonia* oaks.



miles

13½

Alt. 940 ft. Road now descends into a side-valley from the E. The valley-floor is of lava from the Kaplan Alan, whose peak is visible in the distance ; more vegetation here than at Adala ; valonias still plentiful. Down the valley on the N. side runs a stream, which the road crosses.

15½

Cross to the r. bank of the river by a bridge. The river valley here becomes rather wider, and the stream flows in a broad channel. The valley-walls are covered with valonias. On the NW. the hills slope gradually to the river, which has cut for itself a well-defined bed ; on the E. the lower slopes are similar, but the hills above on that side are steep.

17½

**Bereket Khan.** A little above this point the valley broadens out to a plain, which gradually widens towards the N.

18½

Two volcanic hills on the l. The western and higher is a crescent-shaped wall enclosing a crater open to the SE., the lava stream from which is thickly wooded with valonia oaks. The eastern, called Chakal Tepe, is of conical shape, surrounded by lava on all sides, and is also fairly well wooded. Between the hills rise small serrated lava ridges. On the opposite side of the valley is Sindel village.

20½

Cross a stream. **Charyklar** village to l.

21½

**Evjiler** village at the foot of a small volcanic cone. Road bends N., skirting low hills on the l. A track also runs NNE. across the plain.

24½

Cross a stream and turn E., still skirting the hills.

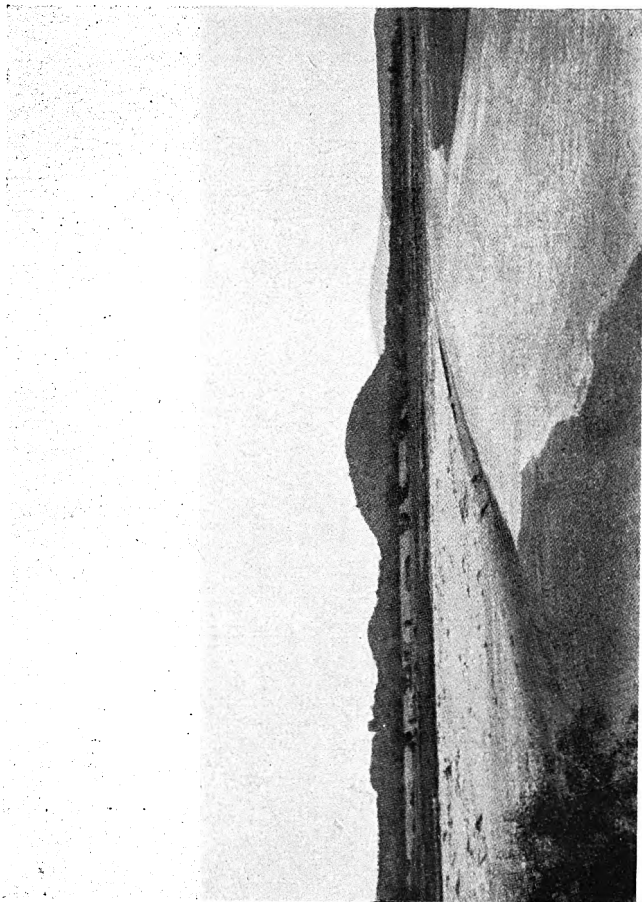
25½

To r. the Demirji Chai joins the Gediz Chai, which comes through the hills from the E. Cross a stream and ascend the hills in a NNE. direction roughly parallel to the **Demirji Chai.**

28½

**Borla**, alt. 715 ft., market town at no great height above the Demirji Chai, in ruins in 1901. A short

PLATE VII



THE GEDIZ CHAI BELOW CHAKAL TEPE

(To face p. 334)



miles

distance farther on the valley narrows. The whole district is rich in valonia oaks.

For the next 13 miles there are no details available for the country passed through, but it appears to be fairly easy. For about half that distance the road seems to run generally parallel to the Demirji Chai, over low hills broken by short valleys, down which streams run to the main stream. It then turns NW. away from the river over similar country, and after a few miles turns N.

41½ **Aghacholuk** spring.

43 The road winds very much during the next few miles.

46 Reach the edge of a small plain formed by a widening of the Demirji valley. Road continues N. across a stream, passing two isolated hills on the r. and one on the l. Vine cultivation and many valonia oaks here. Some miles to E. rises the As Tepe.

48 The hills again close in, but the valley still remains fairly broad; numerous villages on the slopes to l.

51½ **Chak Chiftlik**, alt. 1,535 ft. Opposite this point the Yortan Chai enters the river down a large valley from the E. The Demirji valley now becomes rather narrower.

53 Spring. A little farther on there are several mills at the mouth of a valley from the N. The hills here are covered with firs and the lower slopes with vine cultivation. Trees grow along the river; the willow and elaeagnus are the commonest.

58 A tributary enters the main stream from the E. Road crosses the Demirji Chai.

58½ **Demirji**, alt. 2,760 or 2,860 ft., head-quarters of a kaza in the Sarukhan sanjak of the Aïdin vilayet, pop. about 3,000, mainly Turks. The town lies on the peninsula enclosed between the Demirji Chai and the tributary just mentioned. A small ravine divides

miles

this neck of ground, and most of the houses are built on its upper slopes and on the adjoining high ground. The place has little importance for trade, but appears prosperous. The chief industry is carpet-weaving and the dyeing of wool, for which the native dyes were still used in 1901. The district is fertile. Cereals and raisin-grapes are the chief crops.

- 61 Ancient quarry near a valley. A little beyond this point the ascent becomes steep for a short distance, after which the track reaches a fairly broad upland basin running ENE. between pine-clad hills. Ascent now very gradual.
- 64 Summit of the Demirji Dagħ, alt. 4,775 ft. The northern slopes are also wooded with pines, above which are scattered beeches, while below the pine-belt are oaks and chestnuts. Track now crosses a flat hill terrace.
- 64½ Spring. Follow a ridge between two valleys and descend steeply into the eastern.
- 67½ Cross the stream in the valley. It runs to the Bereket Chai, a tributary of the Simav Chai.
- 68 Assar Kōi to l.
- 69½ Track joins that from Bigadich (see Route 80, mile 53½).
- 79 Simav, alt. 2,720 ft.

## ROUTE 98

SIMAV—KULA, 55 miles

This route is fit only for pack-transport, and is difficult in many places. Supplies are scanty except about the beginning of the route and at Selindi (mile 31). There is a good deal of timber to about mile 40. The country beyond that point is bare and uncultivated, and water also appears to be scarce in summer over this stage.

miles

- 0     **Simav**, alt. 2,720 ft. Direction at first E. along the plain across several small streams flowing to the lake.
- 1½     Track turns S. into a narrow well-cultivated plain. Ascending gradually, it reaches the foothills and enters a wooded valley, which narrows as the hills joining the mountains to W. with the Shabhane Dagħ to E. are approached.
- 5     Summit, alt. 3,780 ft. Track descends and enters a deep valley watered by a small stream, the **Aine Chai**. Direction becomes more westerly.
- 11     Leave the valley and ascend the hills on the r. over rocks on to an extensive table-land sloping gently to the S.
- 15½     **Kara Kōi**. Descent into a deep thickly wooded ravine.
- 18     Track again enters the valley followed from mile 5 to mile 11; stream now large. Farther down the cliffs on either side become higher, and an isolated hill is passed on the l. in the middle of the valley. For some distance the track continues along the r. side of the valley, with the stream flowing in a gloomy chasm to l.
- 21     Sudden turn in the path; wide view opens out SSW. beyond the valley and commanding the extensive range of plateaus between the Gediz Chai and the Aine Chai. Descent becomes steeper and more rocky; many loose stones.
- 22     Reach the bed of the river; plane-trees along the banks, alt. about 1,800 ft. Direction now becomes gradually more westerly; path easy, following the river.
- 31     **Selindi**, alt. 1,530 ft., head-quarters of a nahie. The place did not look prosperous in 1901. There are no springs, and drinking-water is taken from the river. Track continues WSW. down the Aine Chai past the ruins of the ancient Silandos. The river is shallow and

miles

is crossed several times. The corn and opium harvest here is gathered in the first half of June. The hills to N. are bare of timber, but well cultivated with cereals ; those to S. are wooded.

37     **Tefen Köi**, small village of 10 or 12 houses.

38     Cross the river and begin a winding ascent up the steep hills which separate it from the Gediz Chai.

40     Summit. To S. and E. stretches an extensive table-land broken by valleys. The Kara Devlit is seen a little W. of S., and W. of it other volcanic peaks (see mile 53 below). To SE. the mountains of Takmak are just visible. The whole country is barren and uncultivated, and almost bare of trees.

Track crosses the plateau and descends into a narrow stream valley in which (? to l.) is a small bathing - resort, **Hammamlar**, with a hot spring (temperature 136.4° F.).

46     Reach the **Gediz Chai**. Track turns S. up the r. bank past a mill and a mineral spring. The stream here is clear and rapid, and flows with a winding course through rocky channels formed by perpendicular cliffs.

47     Cross the river by a stone bridge. Direction now SW. ; gentle ascent over volcanic soil. There appears to be an alternative path more to the E.

49     Remarkable cliff of volcanic formation overlooking the head of a small valley on the r.

51½     **Boz Tepe** to l. with a crater opening towards the S. ; on the r. is a rounded volcanic cone. Track follows a flat waterless valley between the lava to l. and the marble formation to r.

53     **Kara Tepe** to l. ; well-defined crater opening W. (relative alt. about 200 ft.). About ¾ mile E. of Kara Tepe is the **Kara Devlit**, alt. 2,650 ft.

55     **Kula**, alt. 2,135 ft.

## ROUTE 99

DEMIRJI—SELINDI, 31 miles

This is a horse-track, and supplies are scanty. There is apparently a good deal of timber.

miles

0 **Demirji.** Track runs up the ridge to S. of the town. From the summit a view is obtained over the Gediz Chai basin sloping gently S.

Track then descends a cultivated valley with gently sloping sides.

3½ Cross the deep valley of the **Yortan Chai**, alt. 1,850 ft.; extensive vine cultivation here.

The stream comes down a valley from NE. and now flows W. Upstream the valley appears to be shut in by a high pine-covered ridge.

Track ascends steeply from the stream.

4 **Yortan** village  $\frac{3}{4}$  mile to l.; to r. is a deep valley running NW. to the Yortan Chai; on its far side is Martilos Chiftlik on a hill terrace.

Track descends gradually into the valley, into which run several rugged ravines from the E.

5½ **Serjiler** village  $\frac{1}{2}$  mile to S.

Track turns W., ascending steeply out of the valley. Pines alternate with junipers and deciduous oaks, and here and there are pastures with shepherd camps.

6 Track again turns S. and runs along the plateau, which slopes gently E. from the E. side of **As Tepe**. It crosses the heads of several valleys; several springs, some rye cultivation and summer pastures. The mountain to r. is finely wooded with deciduous oaks.

9 Summit, alt. 3,610 ft.; extensive view NE. to the Gediz Chai, E. to the Murad Dagh, and S. over wide plateau country.

10 Cross the last spur of As Tepe.

11 **Ahadlar** village, alt. 3,085 ft. The houses are so



miles

closely packed together as to appear to form only one building. A similar village, Gaurian Kõi, lies on the slope of a valley to NE.

A track branches to r. here and joins the road from Ak Hissar to Kula at Injikler (see Route 93 from mile 59).

16 $\frac{3}{4}$  **Aivalan**, alt. 2,345 ft., in a small valley plain.

17 $\frac{1}{2}$  **Tepedibi** village on an isolated hill.

Track descends gently.

19 $\frac{1}{4}$  Cross the **Alaghach Chai**, alt. 1,885 ft.; pines on the slopes. Several large flat-topped summits among lower hills give the landscape a distinctive appearance; to S. is a plateau stretching from E. to W. and broken by the steep-sided valleys of the streams from the N.

Track ascends the ridge between the Alaghach Chai and Ilgi Chai.

20 Summit. To l. is **Gürneit Tepe**, a flat-topped hill with the ruins of a mediaeval castle.

20 $\frac{3}{4}$  Cross the **Ilgi Chai**. **Yaghjy Kõi**, alt. 3,000 ft., 1 $\frac{1}{4}$  mile to E. Beyond the village stretches an undulating plateau rising gently to the foot of the Yaghjy Dag. The ridge is fairly steep, with summit about 1,000 ft. above the village, and runs in a curve open to the W.

Track runs along the valley-slope SSE.

23 $\frac{1}{4}$  **Chotak**, alt. 2,665 ft., small village in a broad fertile side-valley of the Ilgi Chai.

Track runs SSE. up the gently sloping valley.

26 Watershed, alt. 2,285 ft. A short distance farther on several small streams cross the track and form a tributary which runs S. to the Selindi Chai.

27 $\frac{3}{4}$  Descend a narrow stream valley, the **Hakly Dere**, still SSE.

30 $\frac{1}{4}$  Valley opens out.

31 **Selindi**, alt. 1,530 ft. (see Route 98, mile 31).

PLATE VIII



YAGHJY DAGH FROM THE WEST

(To face p. 340)



## ROUTE 100

## BORLA—KULA, 25 miles

There are few supplies to be had along this track, and water is very scarce in summer. There is some timber, mainly valonias, along the first part of the route.

miles

0

**Borla**, alt. 715 ft. Track branches to l. from the Salykhly-Simav chaussée (see Route 97) and runs down the broad valley of the **Demirji Chai**.

$\frac{3}{4}$

Ford the river.

3

Cross the **Gediz Chai**, which here emerges from a narrow valley into a plain, to be joined by the Demirji Chai about  $\frac{3}{4}$  mile to W. Track passes **Khamaily** village, alt. 680 ft., ascends to a small plateau about 300 ft. above the river-level, and then runs SE., ascending through valonias. A cistern is passed.

$4\frac{3}{4}$

**Yarbashy** village to r. in a valley.

$5\frac{1}{2}$

Reach the edge of the upper plateau, alt. 2,015 ft.; view W. down into the Gediz Chai valley. Gentle ascent.

7

Cross a small stream in a valley; **Chenger** village  $\frac{1}{2}$  mile upstream to l. To SSW. is a volcanic cone, sometimes called Kaplan Alan, from the name of a chiftlik near it. Immediately W. of it is another smaller cone. Both are surrounded by a lava-field.

Track ascends over a flat-topped ridge; some cultivation.

$8\frac{1}{2}$

Spring on r. Track ascends towards a col between two volcanic peaks called **Chatal Tepe**.

$10\frac{1}{2}$

Summit, alt. 2,640 ft. The peaks on either side are about 650 ft. higher than the col. To l. a valley runs N. down towards the village of Eide.

Track descends into a small plain with maize cultivation. Part of the plain is marshy.

miles

- |     |   |
|-----|---|
| 12½ | <b>Mene</b> (anc. Maeonia) village of 1,000 inhabitants in a small plain ; some maize cultivation.<br>Track runs ENE., skirting the hills to r. |
| 15  | General direction changes to E. by S.   |
| 17  | Volcanic cone to l.   |
| 19  | A track branches ENE. to Sandal, 1½ mile.   |
| 21  | <b>Orta Kõi</b> to l. Here the present route apparently joins the track from Kula to Derekõi (see Route 105, mile 4).                           |
| 25  | <b>Kula</b> , alt. 2,135 ft.  |

## ROUTE 101

SALYKHLI—KULA, 31½ miles

This is an unmetalled track. The country traversed is generally bare and uncultivated after the plain of the Alashehir Chai is left, and there is practically no timber. Water is scarce in summer.

- |     |   |
|-----|---|
| 0   | <b>Salykhly</b> , alt. 360 ft. Track runs ENE. straight across the plain.   |
| 1   | Circassian village.   |
| 3   | <b>Molla Suleiman</b> , Yürük village.  |
| 4   | Cross the <b>Alashehir Chai</b> (dry in September).   |
| 5½  | <b>Durasly</b> village.   |
| 7   | Track now ascends over undulating hill country ; three tumuli to r. and ancient ruins. Direction E. for some miles and then NE. |
| 14½ | Cross a stream which flows W. to join the Gediz Chai opposite Adala.  |
| 15½ | Ascend a ridge, following the stream valley and passing a spring.   |
| 17½ | Summit, alt. 2,800 ft. View opens into the volcanic district. About here a track from Kula to Ak                                |

miles

- |     |   |
|-----|---|
|     | Hissar via Adala comes in on the r. (see Route 102).<br>Present route runs N.             |
| 19  | <b>Mene</b> , alt. 2,440 ft. For the rest of the journey see<br>Route 100, from mile 12½. |
| 31½ | <b>Kula</b> , alt. 2,395 ft.  |

## ROUTE 102

KULA—AK HISSAR, 61 miles

There is no recent information about the first 50 miles of this route. Supplies and timber appear to be scarce, and most of the streams are dry in summer. From Adala (mile 25) supplies should be procurable if a more southerly route along the Gediz Chai plain be taken instead of that followed here over the hills.

The first 4 miles may possibly coincide with the beginning of Route 105. The road from Salykhly to Kula is crossed apparently between mile 10 and mile 13½ (see Route 101, mile 17½).

- |     |   |
|-----|---|
| 0   | <b>Kula.</b> Track crosses the plain W. of the town.  |
| 1   | Ascent begins up gently sloping hills, the sides of which are covered with rich vegetation, with much vine cultivation.   |
| 3   | Several volcanic cones planted with vines to r.; another cone some distance to NW.  |
| 3½  | Volcanic cone to l.   |
| 5   | Descend into an undulating valley plain bounded by several volcanic cones to r. and a chain of mountains to l., the latter covered with scrub and camel-thorn. The plain is generally about 1 mile broad. |
| 10  | Volcanic cone to r. Track ascends the low ridge which forms the western limit of the plain.   |
| 10½ | Summit; rapid descent down a narrow stream  |

miles

valley between steep rocks; thick undergrowth of ilex, oak, and juniper.

13½ Fountain and guard-house.

14 Track leaves the valley and turns to r. over the hills; some cultivation.

17 Reach the plain; high hills to r. Track crosses several deep winding watercourses (almost dry in April).

22 **Dombaili**, Turkmen village, 200 yds. to r.

25 Ford the **Gediz Chai**. The river here is wide and deep in places. It flows through a strip of scrub. The l. bank is of limestone, the ground sloping gently to the stream. The r. side is of lava formation, the bank rising abrupt and bare to a height of about 80 ft. above the river. The lava formation spreads fan-wise into the plain, and round its flat slopes, here covered with gardens, the river bends W. through the plain.

**Adala** on the r. bank of the river, head-quarters of a nahie.

Track now runs over bare open country.

32½ Descent into the plain. **Bin Tepe** (see Route 96, mile 13½), with the Mermere Göl to W. of it, lies in front. Track skirts the mountain on the r.

37 The lake now lies to l., nearly parallel with the road, which now runs NW.

40½ Track still lies along the side of the mountain; some stunted valonias on the slopes.

The lake is now much farther off to l.

43 Spring beneath a high rock.

46 Mermere lies about 3 miles to l. of the track.

49 Cross a wide river-bed (? the Kum Chai), dry in September.

50 About here the road from Salykhly to Ak Hissar via Mermere is joined (see Route 96, mile 26½).

61 **Ak Hissar**.

## ROUTE 103

## SALYKHLY—ALASHEHIR, 24 miles

This road is fit for wheels throughout in dry weather. It appears to be metalled from Dereköi (mile 13½) to Alashehir. There is a great deal of uncultivated land along the route, but supplies in moderate quantities should be procurable. Between Salykhly and Monamak (mile 7¼) the forehills are covered with a fine growth of oleander scrub.

miles

- |     |   |
|-----|---|
| 0   | <b>Salykhly.</b> Road runs ESE. towards the foot of the hills.  |
| 2½  | Cross the railway and a stream from a valley to r.  |
| 4¾  | <b>Yenibazar</b> on a stream in a wooded ravine.  |
| 7¼  | <b>Ashaghy Monamak</b> (Monobat) on a stream ; railway station ½ mile to l. <b>Yokary Monamak</b> lies 1½ mile up the stream valley to r.   |
| 9½  | Cross a stream and pass <b>Köseli</b> village.  |
| 13½ | <b>Dereköi</b> (see Route 105, mile 21½).   |
| 16½ | <b>Yeniköi</b> ½ mile to r. on the slope.   |
| 17¼ | A track comes in on the r. from Kelles (see Route 155, mile 16).  |
| 18½ | Railway station ½ mile to l. Road crosses a stream which comes down a large valley on the S. ; a wooded mountain can be seen rising behind the foothills.   |
| 19  | Spring on l. Road crosses another stream.   |
| 20  | Cross the remains of a dike, and a little farther on a second dike running at right angles to the hills. The second is about 30 ft. high, and the ground between the two appears to have been excavated to some extent. |
| 22  | <b>Krumuluk Khan</b> ; spring to r.   |
| 22½ | Cross the <b>Takhtaly Dere</b> . Road runs through vineyards and olive groves.  |
| 24  | <b>Alashehir.</b>   |



## ROUTE 104

ALASHEHIR—KULA, 21½ miles

This road is marked as a chaussée on the maps and is passable for wheels. From about mile 7½ to mile 13 there is little cultivation. Water is scarce in summer. There seems to be little timber along the route, but a good deal of scrub.

miles

0

**Alashehir.** Road runs N., crossing the railway at the station, and then continues NNE. over gently sloping alluvial plain, partly fallow, partly covered with maize-fields; much liquorice scrub.

3¾

Cross the Alashehir Chai by a bridge, alt. 425 ft. Road bends NW.

4½

**Tepe Kõi** on r. Road begins to ascend gradually.

7

Spring on l. Deserted village near a stream with a gravelly bed (dry at the end of June). Here the foot of the hills is reached.

7½

**Kojabeyli** village. Road begins to ascend N. up the hills. The slope is gentle and uniform, broken by short valleys; scanty vegetation; scattered thorn scrub. The road avoids the valleys and zigzags up a ridge.

8½

Guard-house.

11½

**Domruja**, poor village.

13

Summit, alt. 2,970 ft. The edges of the plateau on either side are about 500 ft. above the level of the col. Prominent peak to E., Kabaghach Dagh, alt. 3,600 ft., marked by a solitary tree.

Road descends gradually down an easy valley between heights which continue at the same elevation.

The country becomes more fertile, and appears better watered than the side towards Alashehir; evergreen oaks on the slopes; rye and poppy cultivation; some scattered wild pears.

miles	
18½	Stream from r. (dry at the end of June). The heights now become lower, the valley opens into the plain, and Kula comes in sight.
21½	<b>Kula</b> , alt. 2,135 ft.

## ROUTE 105

## KULA—DEREKÖI, 21½ miles

This is an easy pack-route. There are few villages along the track, and little cultivation except near Kula and Mendekhora (mile 15). Timber is scanty, but there is a considerable amount of scrub on the hill-slopes. Water is scarce in summer except at Mendekhora.

0	<b>Kula</b> , alt. 2,135 ft. Track runs first W. and then ascends WNW. among cultivated fields and evergreen oak scrub.
2½	Ascent now easier, alt. 2,660 ft.
4	Summit, alt. 2,910 ft.; to l., is a conical peak; to r. <b>Orta Kõi</b> , and a valley falling to Sandal village 1½ mile N. About here apparently tracks go off to Borla and Ak Hissar (see Routes 100 and 102). Track descends SW. into an alluvial plain.
7½	<b>Gürneit</b> village, alt. 2,660 ft., on the slope at the S. corner of the plain.
8	Cross the watershed, alt. 2,670 ft. Descend SW. down the W. side of a valley (stream dry in August). The slopes are uniform and covered with evergreen oak scrub. Farther on the stream carries some water, and there are some trees.
10½	Spring, alt. 1,940 ft. The valley becomes deeper.
13	Steppe vegetation here. Fairly easy descent.
15	<b>Mendekhora</b> , alt. 570 ft., market town and headquarters of a nahie, on the slopes of a large mound above the steep side of the Alashehir Chai valley; many tumuli in the neighbourhood. The place is the

miles

site of the ancient Kome Philadelphion. There is abundant water, brought from the valley which the track has followed. The slope down to the plain and the alluvial ground at the foot are covered with orchards, vineyards, and fig and olive-trees.

Track descends the slope SW., and then turns W. across the plain.

18½      Ford the **Alashehir Chai**, alt. 340 ft.; very little water in August.

Track winds SW. across marshy plain.

21      **Dereköi** railway station; poor khan situated among irrigation-channels, alt. 390 ft.

21½      **Dereköi** village at the foot of the hills.

## ROUTE 106

KULA—INEİ, 36½ miles

This is a fairly easy horse-track. The country traversed is sparsely inhabited and not sufficiently cultivated to yield supplies in any quantity, except in the neighbourhood of Kula and Takmak. Most of the streams are dry in autumn. There is a good deal of timber, mainly oaks, on the hills.

The altitudes given in the itinerary are from two separate authorities. The stage from Kula to Takmak forms one series and that from Takmak to Inei another.

0      **Kula**, alt. 2,135 ft. Road runs E.

1      Summit of the easy ridge forming the eastern boundary of the depression in which Kula lies, alt. 2,590 ft. Descent rather steeper than the ascent. The plain below is fairly well cultivated, and dotted with numerous fruit-trees.

3      Cross a branch of the **Sügüt Chai**.

3½      Cross a second branch of the river, alt. 2,115 ft. The two arms join about 1 mile to N., and the united stream flows NE. to the **Gediz Chai**.

miles

- 5 Spring. Direction now SE.
- 6 Cross a stream.
- 7½ Gradual ascent begins.
- 8½ Guard-house and kahve. **Ak Tash** village lies in a ravine ½ mile N. of the road.
- 9½ Cross several small streams flowing NE.
- 11 Cross a stream which comes down a valley to r. between the Beshkaya Dagħ and Omurbaba Dagħ. Road winds ESE.
- 11½ Guard-house on l.
- 12 Cemetery on r., alt. 2,715 ft.
- 12½ Cross a stream.
- 13½ Guard-house on l., alt. 2,500 ft.
- 13¾ Cross the **Karöz Chai**, which comes down from the Omurbaba Dagħ.
- 14½ Cross another branch of the Karöz Chai. All these streams flow NE. in broad deep ravines to the Gediz Chai. Direction now SE. up the stream just crossed. High wooded hills to r.
- 16½ Recross stream here, and again ¾ mile farther on. Cemetery.
- 17½ **Granköi**, Turkish village, alt. 3,030 ft.
- 18 Cross a stream flowing N.
- 21 **Takmak**, alt. 2,870 ft. or 2,760 ft., small place lying on an undulating cultivated plateau at the head of a valley running NE. The village is also called Eshme after a Yürük tribe, and has been raised during the last generation from the status of a Yürük village to the head-quarters of a kaza. It has fine redif barracks. Excellent carpets are said to be produced in the neighbourhood.
- A chaussée connects the place with the railway station of **Alvanlar** about 4 miles distant to S.
- Track continues E. over low undulations and then begins to ascend ENE. over a gently rising plateau; cultivation and valonias here.

miles

- 25      Slight ascent over a col, alt. 3,220 ft. Track winds across a valley running S. and ascends to another col.
- 25½      Summit, alt. 3,285 ft. Descend into another valley, which also runs S.; maize cultivation and trees.
- 27½      **Akhmedler**, large village; to S. is a summit belonging to a mountain group of the same name as the village; oak scrub on the slopes.
- 28½      Cross a ridge and descend towards the easy slopes of a valley running E. On both sides of the valley many peaks rise 700–1,000 ft. above the surrounding country. In the descent to the valley-bottom a spring which contains iron is passed.
- 31      Track crosses the stream in the valley, which here bends S. Direction at first E. and then SE. over plateau sloping gently S., and furrowed by several valleys running in that direction. This plateau country stretches to the Burgaz Dagh, which can be seen far to the E.
- 36½      **Inei**, alt. 2,350 ft., large village in a valley about 100 ft. deep; many caves in the steep sides of the valley. The modern village contains many stones belonging probably to the ancient town of Naë, which lay 1¼ mile to S. The population is Yürük. Some opium is prepared here for export.
- Immediately E. of the village on the plateau is the railway station.

## ROUTE 107

## ALASHEHIR—USHAK

There are several tracks between Alashehir and Ushak, and a cart-road which runs via **Ellehen** (9 hrs.) and **Göbek** (16 hrs.). The total travelling-time is 21–22 hrs.

None of the roads are easy. The deep channels cut by the streams provide serious obstacles in travelling, and the gradients are steep in places. The chief difficulties seem to be encountered between Alashehir and Göbek.

## ROUTE 108

## SELINDI—TAKMAK, 20 miles

This is a horse-track through easy country inhabited almost entirely by Yürüks. There are few villages *en route*, though the country appears to be fairly fertile. Grazing is probably plentiful.

miles

0      **Selindi**, alt. 1,530 ft. Cross the broad valley of the Selindi Chai and ascend the slope on the S. side.

2      Yürük hut here in 1901, and large stones brought from the ruins of a church in the neighbourhood. Fine view NNE. over the hills bounding the river valley above Selindi.

Track runs SW. for  $\frac{1}{2}$  mile over wooded plateau.

2 $\frac{1}{2}$       Cross a col, alt. 2,500 ft. Gentle descent S. down a valley.

5 $\frac{1}{2}$       **Orta Adana** village. The valley has now widened out; in this neighbourhood are many large and small hills deeply furrowed on all sides by drainage gullies.

7 $\frac{1}{2}$       **Yokary Adana** village on a round-topped ridge, alt. 2,340 ft.; view W. into a broad valley enclosed by plateau country.

Track now descends towards the Gediz Chai.

9 $\frac{1}{4}$       Cross the **Gediz Chai**, which comes from NE. along the foot of the serrated group of hills called Chatal Tepe, and here flows in a broad valley, alt. 1,470 ft. It enters a narrow and winding valley in the volcanic country farther W. At this point it is easily fordable.

About here the track apparently crosses the route from Ushak to Kula (see Route 110, mile 30 $\frac{1}{2}$ ).

9 $\frac{1}{2}$       **Sirge**, alt. 1,560 ft., small village on a low terrace. The huts composing the village are grouped round the konak of the Alibey.

Track now crosses a broad terrace with pasture-land, about 330 ft. above the river.

miles

- 11½      **Kösseler** village. The ascent becomes steeper up the long uniform heights which accompany the Gediz Chai valley on the S. The ground is covered by a scanty vegetation of deciduous oak scrub and thorn.
- 13½      Summit of ascent, about 1,000 ft. above Kösseler. The country in front is a broad undulating plateau with easy valleys. Some trees, mainly oak, are seen scattered among cultivated fields.
- Track continues S. by E., crossing the heads of a number of valleys which open E. towards a large valley running NE. to the Gediz Chai.
- 17      **Dere Köi.** Direction now SSE.
- 18½      Cross the stream in the large valley mentioned under mile 13½.
- 19½      Spring. Track crosses a flat ridge.
- 20      **Takmak** (or Eshme), alt. 2,760 ft., on undulating cultivated plateau at the head of a second valley running NE.

## ROUTE 109

TAKMAK—USHAK, 33½ miles

This route is a horse-track over fairly easy plateau country. Few villages are passed, and there is little cultivation. Timber also is almost entirely absent, and water is scarce in autumn.

An alternative route between Takmak and Ushak runs via Inei. The stage from Takmak to Inei is detailed in Route 106. From Inei a chaussée, probably in bad condition, runs NE. not far from the line followed by the railway.

- 0      **Takmak**, alt. 2,870 ft. Track runs NNE.
- ¾      Cross a stream. Track ascends out of the valley.
- 2¼      Direction now NE. through bare country broken by stream valleys from the Akhmed Dagh to N. Low hill country to l.
- 3½      Cemetery on l.

miles

- 41 $\frac{1}{4}$  Cross the **Kurbanlyk Dere**.  
 5 **Esseler**, Turkish village.  
 7 Cross the **Dunguldak Dere**.  
 10 **Chardaklar**, Turkish village  $\frac{1}{2}$  mile to l. Track descends into a stream valley.  
 10 $\frac{3}{4}$  Cross the stream (? a branch of the **Dunguldak Dere**) and ascend the valley of a tributary.  
 11 $\frac{1}{4}$  **Orushlu** (or Ismail Bey Kõi).  
 12 $\frac{1}{2}$  Cemetery.  
 13 Cross a small stream.  
 14 Cross to the l. bank of the stream followed from mile 10 $\frac{3}{4}$ , and recross it a short distance farther on.  
 14 $\frac{3}{4}$  Guard-house. The country here is a plateau crossed by several tracks which meet at the derbend.  
 16 $\frac{3}{4}$  Summit, alt. 3,460 ft. Direction now N.  
 18 $\frac{1}{2}$  **Chardak**, Turkish village, alt. 3,450 ft.  
 Track now turns ESE. through bare monotonous hill country.  
 21 $\frac{1}{2}$  **Akkechili**, Yürük village; fine view backwards to the Akhmed Dagħ, S. to the Ishikli Ova, and N. to the Ak Dagħ at Gediz.  
 Track descends SE. down a stream valley.  
 24 $\frac{1}{2}$  Reach a plain.  
 25 **Kyrk Kõi**, Turkish village, alt. 3,140 ft.  
 Track turns NE. over bare uncultivated plain; no water in autumn.  
 30 $\frac{1}{2}$  Cemetery on a spur. **Pasha Chiftlik** village  $\frac{1}{2}$  mile to r.  
 31 $\frac{1}{2}$  Cross a stream; **Kuijuk**, Turkish village with spring on the r. bank.  
 Track runs N. through the plain.  
 33 $\frac{1}{2}$  **Ushak**, alt. 3,120 ft.



## ROUTE 110

## USHAK—KULA, 45 miles

This route appears to be a post-road, but it is probably fit only for pack-transport. It leads at first through fairly easy but sparsely inhabited country. From about mile 20 it is very difficult in places, with many steep gradients.

Supplies are generally scanty, and water in summer seems to be neither plentiful nor good. There is a considerable amount of timber along the route.

miles

- |     |   |
|-----|---|
| 0   | <b>Ushak.</b> Road runs WSW., at first through picturesque rolling country.   |
| 3   | Enter the valley of the <b>Üleji Su</b> ; some fine trees along the banks. A short distance farther on a small tributary from the mountain to r. is crossed by a bridge.  |
| 6   | Bridge over another small stream, the <b>Karabul Bunar</b> , from the mountain to r. Direction here NW.   |
| 9½  | Cross the stream and recross it some distance farther on.   |
| 12  | <b>Gyüre</b> , large village, formerly a place of considerable importance ; numerous mediaeval ruins.<br>Road fords the river, now called the <b>Gyüre Chai</b> , to the l. bank.   |
| 13½ | Low hills covered with pines here shut out the view of the river. Road descends into a small plain.   |
| 15  | The <b>Gediz Chai</b> comes into view on the r. It is joined about 1 mile upstream by the <b>Gyüre Chai</b> .   |
| 16½ | Road here runs close to the <b>Gediz Chai</b> , which at this point is very broad. A high crag (? <b>Gerdek Kaya</b> ), commanding the river both E. and W., rises sheer from the water's edge and forces the road to turn to the l. Near here is <b>Tekessian Chiftlik</b> . |
| 16¾ | Reach the river again. Direction now W.   |

miles	
20 $\frac{1}{4}$	<b>Yenishehir</b> village. Road now winds steeply up and down over wooded hills.
27 $\frac{1}{2}$	Cross the <b>Gediz Chai</b> by a bridge, the <b>Chatal Tepe Köprüsü</b> . Road still hilly and bad, through more open country. Direction still W.
30 $\frac{1}{2}$	<b>Sirge</b> village to l. on the S. side of the river. About here the road crosses the route from Selindi to Takmak (see Route 108, mile 9 $\frac{1}{4}$ ).
32 $\frac{1}{2}$	Cross the wide bed of a river (dry in September).
34	Steep descent down the mountain-side. The Gediz Chai is again seen immediately beneath the road, at a considerable depth below.
35 $\frac{1}{2}$	Reach the river. A huge rock, with the remains of a castle on the summit, here rises perpendicularly from the water. Below it are the remains of a bridge. Road runs over a small plain, through which the river winds on the l.
37	Ford the river. The road is now well within the volcanic region of Kula.
38	Ancient walls a short distance to l.
39	Ruins near a kahve.
43 $\frac{1}{2}$	Road passes through a cut in the rock. Kula is seen a short distance in front. At a distance of 600–700 yds. rises a volcanic peak, from which a lava ridge winds down towards the town.
45	<b>Kula.</b>

## ROUTE 111

### GEDIZ—USHAK

OVER THE KYZYL DAGH, 23 miles

There appears to be a chaussée between Gediz and Ushak. The route described here is a rather difficult pack-road. Supplies are scanty. Timber is plentiful to about mile 14,

and scrub is abundant throughout. There is little evidence available as to water, but the supply is probably sufficient.

The distances given in the itinerary are either taken direct from the original authority consulted or calculated from his travelling-times. The most recent maps make the distance rather longer.

miles

0

**Gediz**, alt. 2,640 ft., head-quarters of a kaza under Brussa. The town is the ancient Kadoi. The houses are mostly of mud, built close together on the slopes and in the side-valleys. The population numbers about 6,000, nearly all Turks. Gediz has some importance as a road-centre, and controls the gap between the Ak Dagħ and Murad Dagħ. There is a good deal of vine cultivation here.

Route runs SSE. down the r. bank of the Gediz Chai.

2

Cross the river (? by-a ford). Direction now due S.

4

Enter a broad flat valley running from E. to W. It is watered by the Murad Su.

5

Cross the **Murad Su** about 1 mile above its junction with the Gediz Chai. The river is fordable with difficulty in the beginning of April.

Leaving the valley the track ascends a small side-valley.

6

**Erdogħmush** village on l.

Track continues over a succession of hills covered with pine and oak; magnificent views in every direction, particularly to the E. Farther on the hills are more thickly covered with the gum-cistus shrub.

9½

**Güne** village.

10

Summit; view opens out to SW.

Track follows a deep winding path into a deep valley on the S. It then leads over ridges similar to those already crossed.

14

Oaks and pines cease; the hills are still covered with the aromatic gum-cistus.

miles	
14½	Summit (? of the Kyzyl Dagħ); wide view over the plateau country S. and W.
19	<b>Sorkum</b> village. Path now runs down a well-cultivated valley.
23	<b>Ushak.</b>

## ROUTE 112

## GEDIZ—USHAK

## OVER THE MURAD DAGH, 45 miles

This is an unmetalled road, the last 17 miles of which seem to be fit for cart-traffic. Fair supplies of cereals are obtainable except from about mile 7 to mile 23. Between mile 7 and mile 23, the region of the Murad Dagħ, there is little cultivation, but large herds of sheep, goats, and cattle are pastured on the yailas. Timber and fuel are generally plentiful, and there is abundance of water from streams and springs.

0	<b>Gediz</b> , alt. 2,640 ft. Track runs S. by E. down the eastern side of the Gediz Chai valley.
1¾	<b>Haji Kōi</b> to r. on the r. bank of the river. Direction now becomes SE. over a ridge; much cereal cultivation all round.
5	Cross a stream in a side-valley and ascend over a spur into the broad cultivated valley of the <b>Murad Su.</b>
6¼	<b>Gūmtish Kōi</b> on the r. bank of the Murad Su between two streams. Direction now ESE. up the valley.
7½	The valley becomes narrower but is still partly cultivated. The valley-sides are low, with a thin covering of pines.
8¼	Cross the river and turn ENE., still ascending the valley.
10½	<b>Chomaklydeler Chiftlik</b> to r. Track bends N. and

miles

- crossing the river, which here makes a considerable bend, follows the r. bank.
- 12 Track turns NE. and then SE. round another bend.
- 13 $\frac{3}{4}$  Recross the river; a stream comes in on the l. bank. Track now leaves the Murad Su and ascends along the E. side of the tributary valley.
- 14 $\frac{1}{2}$  **Uluja Chiftlik**, five houses, with an oda. A large part of the neighbourhood belongs to the chiftlikji.  
Track crosses the stream and ascends steeply along the l. bank.
- 15 $\frac{1}{2}$  Yaila and mill. The place was formerly a winter bathing-resort.
- 16 $\frac{1}{4}$  Hammam; numerous wooden huts for the accommodation of visitors. The temperature of the spring is between 107° and 108° F. The bathing-resort is visited in July and August by patients from far and near.  
Track continues to wind up the slope.
- 18 $\frac{1}{2}$  Summit, alt. 6,695 ft. The ridge sinks gradually towards the W.; on the E. it rises to over 8,000 ft. at the highest point. Steep descent into a valley with a rapid stream flowing to the Gediz Chai.
- 19 $\frac{1}{2}$  Cross the stream, alt. 5,315 ft. Track ascends steeply.
- 20 Summit of a ridge parallel to the main chain, alt. 6,250 ft.
- 21 Spring. Very steep descent through forest.
- 23 **Yokary Karaja Hissar**, picturesque Yürük village on a stream which drives a large number of saw-mills; the valley is very fertile. A track over the summit of the Murad Dagh comes in here on the l. (see Route 113, mile 19 $\frac{1}{2}$ ). A short distance N. of the village is a cave which winds for a long distance into the mountain. To SSW. lies an oval-shaped hill rising steeply from the stream on its SE. side to a height of 70 ft. On the hill there are mediaeval ruins.

miles

Track now runs SE. for a short distance and then turns SW. across a plateau covered with pine forest.

27½ Steep descent SE. down the slope to a plain, the **Jumburt Ova**.

28¼ **Cheje Kõi**, alt. 3,955 ft. Jumburt village lies 1½ mile to W. on a stream which flows to the Gediz Chai. To SE. the ground falls steeply to a deep broad fertile valley, which runs SE. towards the Banaz Chai.

Track now runs SSW. through cultivation and pasture-land.

31½ Begin to ascend the easy ridge which bounds the plain on the S. It forms the watershed between the Gediz Chai and the Maeander and marks the boundary between the kazas of Gediz and Ushak. Reaching the summit the road descends S. down a valley.

36 **Ashaghy Karaja Hissar** ¾ mile to r., at the foot of the eastern slope of the Elma Dagh. The mountain-sides are broken by steep gullies.

Road ascends SSW. over a spur. Some distance farther on, opposite a spring on the l. side of the road, **Mungarab** village is passed to r. Thin oak scrub now begins to appear among the pines. The hills become lower, and there is more cultivation on the slopes. On the l. they sink gradually towards the valley of the Banaz Chai. **Göven** village lies to l. of the road, and the valley opens S. of it in the direction of the river. Fine orchards, with many walnut-trees, are now seen.

39¼ Road bends W. into the plain of Ushak. A road comes in from Kutahia. Several villages surrounded by trees lie in the plain, which is entirely covered with cereal and opium cultivation. The slopes to N. are partly cultivated and occupied by one or two villages.

43 **Ak Kilsisse**, Turkish village to r. Here a spur

miles

projects into the plain and makes the western end of it narrow.

- 45      **Ushak** at the western end of the plain, alt. about 3,000 ft.; vine cultivation on the neighbouring slopes.

## ROUTE 113

### GEDIZ—ALTYN TASH, 46 miles

Except possibly for the last 10 or 12 miles this route is fit only for pack-transport. Supplies in any quantity are not procurable except in the district round Altyn Tash.

- 0      **Gediz.** Track at first follows that detailed in Route 112.
- 13 $\frac{3}{4}$       The track to Ushak branches to r. up a stream valley. Present route continues to ascend the Murad Su. The valley here is narrow and winding.
- 15 $\frac{1}{4}$       Recross the stream by a bridge, alt. 3,315 ft. The valley now widens again.
- 16      Bridge over a small tributary; **Güne Kõi** lies on its r. bank 1 mile upstream. To N. rises the Jibrail Dagħ, apparently also called Kyzyl Dagħ. The valley again becomes narrow.
- 18      An antimony mine lies about  $\frac{3}{4}$  mile N. of the track. Cultivation on the slopes. Track crosses a small stream.
- 19 $\frac{1}{2}$       **Chukur Ören**, small Yürük village, alt. 3,720 ft. A track branches S. here over the Murad Dagħ, passing several yailas and joining Route 112 at Yokary Karaja Hissar (mile 23).
- Track now ascends E. over a broad ridge, which here joins the Murad Dagħ to the lower parallel range, the Kyzyl Dagħ, on the N.
- 20 $\frac{3}{4}$       Reach a plateau. Track winds ENE.

miles	
22 $\frac{1}{4}$	<b>Beloba</b> , small village of 9 houses, alt. 4,708 ft. ; ancient ruins near. Track winds E.
23 $\frac{1}{4}$	Winding descent into the upper valley of the <b>Uyusular Chai</b> .
24 $\frac{1}{2}$	Cross a stream.
25	Ruin-field on r. at the foot of an isolated hill, on which there is said to be a castle. Track winds E. down the river gorge, crossing the stream five times during the next 3 miles.
26 $\frac{1}{2}$	The valley here widens.
30	<b>Oisu</b> village, alt. 3,870 ft. The barley and wheat harvest is reaped here in the end of September, six weeks later than on the W. coast. Track now leaves the valley, ascending steeply northwards.
30 $\frac{3}{4}$	Edge of an undulating plateau, alt. 4,180 ft. Direction NE.
32 $\frac{1}{2}$	Descent to a small plain formed by a widening of the Uyusular Chai valley.
35 $\frac{1}{2}$	Cross the river to <b>Abia</b> , a poor village on the site of the ancient Appia, alt. 3,510 ft. ; many ancient remains. A track runs N. to Kutahia (see Route 117, mile 13 $\frac{3}{4}$ ).
	Present route now descends the valley.
46	<b>Altyn Tash</b> .

## ROUTE 114

KUTAHIA—SIMAV, 64 miles

The first part of this route, as far as Chavdyr Hissar (mile 21), is a horse-track considerably shorter than the chaussée, part of which is detailed in Route 115. From Chavdyr Hissar the road is a chaussée at least as far as Gediz. The ascent from Kutahia to the col W. of the Ajem Dagħ is fairly steep and difficult in places. From the col the country is easy to Gediz.



There is no information as to the condition of the chaussée from Chavdyr Hissar. Beyond Gediz (mile 38) the route detailed was a track in 1901, but appears to have been metalled between then and 1906, as a report of the latter year speaks of a good chaussée between Gediz and Simav.

A good many villages are passed *en route*, and supplies should be fairly plentiful. The plain of Chavdyr Hissar is well cultivated. Scrub for fuel is to be found nearly everywhere, and there is a fair amount of timber. Water is abundant from streams or springs.

miles

- |    |  |
|----|--|
| 0  | <b>Kutahia</b> , alt. about 3,100 ft. Track runs W. up the l. bank of the rapid stream which comes down from the Ajem Dagh and separates the citadel-hill of Kutahia from the mountain on the S.; fine gardens in the valley, and some overshot mills.   |
| 3  | Cross the stream and recross it a short distance farther on. Direction now SW.; the valley here is deep, and the path is narrow, running under volcanic rocks. It is probably liable to floods in winter.  |
| 4½ | Summit, alt. 4,825 ft. The ridge is rounded at the top and covered with junipers and deciduous oak scrub; many partridges.<br>Descend across several small valleys; oak scrub and scattered trees the chief vegetation.  |
| 7  | Cross a larger valley running SE. The stream in the valley is formed by several brooks (almost dry in July), alt. 4,095 ft.<br>Ascend to a level plateau which forms the watershed between the Porsuk Chai and Adranos Chai. Some distance farther on a depression is crossed in which a number of small streams run S. Oak, pine, and juniper scrub with juniper-trees alternate here with cultivated land. Farther on the scrub becomes thinner; to r. are a number of villages. |
| 11 | Cross a large valley with meadow-land, alt. 3,760 ft. Ascend the hill on the W. side of the valley; wide   |

miles

view from here to the Egrigöz Dagħ and the Ak Dagħ N. of Simav. From this hill the track descends into another large valley running S.

- 12½      Ruin-field to l. **Chömləkji** village to W. on the far side of the valley.

Track continues W. and then turns S. down the stream in the valley past low hills covered with pine woods or scrub.

- 15½      The stream joins the Bazarjyk Dere in a valley running W.

Cross the **Bazarjyk Dere** and ascend the hill on the S. side. General direction SW. View from the top over the broad undulating plain of Chavdyr Hissar. Descend through scrub and evergreen oaks.

- 18      Reach the edge of the plain; cereal and opium cultivation; few trees.

A little farther on the track ascends over a low ridge.

- 19      **Haji Kõi** on the ridge. Descend again to the plain and, crossing a tributary, follow the r. bank of the **Adranos Chai** (here called Chavdyr Hissar Chai).

- 21      **Chavdyr Hissar** (anc. Aizanoi), fairly large village on the r. bank of the river, which here is 12–15 yds. broad and fairly rapid; alt. 3,255 ft.

There are ancient walls on both banks, and the river is spanned by an ancient bridge. On the l. bank are well-preserved ruins of Aizanoi, in particular an Ionic temple, the theatre, and the stadium. There are also numerous remains in the modern village.

Route now follows the chaussée which runs between Kutahia and Gediz. Direction SW. across the plain.

- 23      Begin to ascend the hills which bound the plain on the SW.; narrow valleys to r. and l.; down the r.-hand valley comes the main stream of the Adranos Chai.

miles

- 25½ Summit, alt. 3,815 ft. ; some cultivation here and low scattered junipers.  
Road winds down into another plain.
- 28½ Cross the Adranos Chai by a bridge, alt. 3,420 ft. Road continues across the plain up the l. bank of the river.
- 31 Cross a branch of the river and enter the narrow valley of another branch.
- 31½ Spring to l. on the opposite side of the valley.
- 33½ Summit, alt. 3,920 ft. The ridge forms the watershed between the Adranos Chai and Gediz Chai ; oak and pine scrub here ; view S. over the valley country of the upper Gediz Khai ; to N. the Döshejik Dagħ, to W. the Jibrail Dagħ.  
Road descends W. by N. towards a deep valley but turns SSW. before reaching it. Some distance on extensive vine and mahaleb cherry cultivation begins. Road descends a side-valley of the Gediz Chai.
- 38 Cross the Gediz Chai by a primitive wooden bridge to **Gediz**, alt. 2,640 ft.  
Route now runs WSW. across valleys and ridges.
- 41 **Arabja** village on l. Road here crosses a cultivated terrace. In front is a large valley system from Ak Dagħ.
- 42½ Cross a stream by a bridge. **Yelki** village on the r. bank.
- 43½ **Tekke** village at the foot of Ak Dagħ ; strong spring.
- 44½ Cross a stream. **Gübek** village on the r. bank. Road ascends over a fairly high ridge. View S. over a broad cultivated valley running eastwards to the Gediz Chai.
- 45½ Direction changes to WNW. Road crosses several valleys. To r. is Ak Dagħ, to l. some low outliers.
- 50½ **Aivajyk** village. Direction now more westerly, over valleys and ridges.

miles

53

**Shabhane**, market town, alt. 3,210 ft., head-quarters of a nahie under Gediz. On the western slopes of the small valley in which the village lies are a number of abandoned alum mines. A coal-seam has been seen a short distance E. of the village.

From Shabhane to Simav there are no details of the road, but it should present no difficulty.

64

**Simav**, alt. 2,720 ft.

## ROUTE 115

### KUTAHIA—EMED, 49 miles

The first 15 miles of this route are a horse-track, very rough in places. The track appears to coincide for a few miles with that detailed in Route 114, but it is uncertain where it leaves the latter. The chaussée, which is joined at mile 15 and followed to Chavdyr Hissar (mile 25), was unfinished in 1899. There are bad stony patches along it, and there is no recent information regarding its condition. From Chavdyr Hissar the route is again an unmetalled road, but practicable for carts at least as far as Yarysh (mile 39) and probably right to Emed.

Supplies are scanty. There is a certain amount of scattered timber.

- 0 | **Kutahia**, alt. about 3,000 ft. Track runs up the valley behind the castle, following a small stream; fine gardens at first, then hazel woods, and finally, at the top of the ascent, thinly scattered pines.
- 4½ | **Summit**. Track now runs nearly level for about 1 mile round the heads of small valleys opening down southwards.
- 5½ | **Descent begins**. Probably about here the present track branches to l. from that detailed in Route 114.
- 7½ | **Track ascends another ridge**.

miles

- 9 $\frac{1}{4}$  Summit ; short descent.
- 10 **Yaila Baba.** Short descent to a grassy valley and then down the stream in the valley.
- 12 Pass a village (? Bushaklar).
- 13 $\frac{1}{2}$  Enter the plain which opens at Ortaje.
15. Reach the Kutahia-Gediz chaussée (see introduction above and Route 114, miles 21-38).
- 17 **Gönük Ören** under the hills at the W. side of the plain. Slight rise and then a view over the plain of the Tavshanly Chai. The double-peaked Egrigöz Dagħ is seen to NW., and another mountain, lower and smaller, a little to r. of it. The long featureless mass of the Murad Dagħ fills a large section of the S. horizon. In front is another line of hills (? the Shabhane Dagħ).
- Road descends gently.
- 21 **Avshar Kõi.** From here Chavdyr Hissar lies due W. ; the N. summit of the double-peaked mountain above mentioned bears 298°.
- Road runs over plain.
- 25 **Chavdyr Hissar** (see Route 114, mile 21). Track crosses bare plain. General direction a little N. of W.
- 30 **Örenjik.** Track runs for a short distance through a level grassy passage between rocky hills, ascending a stream. Then the passage opens out into a small bare plain, the first part of which may be marshy.
- 32 **Ishiklar**, large village  $\frac{1}{4}$  mile to r.
- 33 **Cherte** village  $\frac{1}{4}$  mile to l. Track now runs NW. up a narrow valley, still ascending the stream ; gradual easy ascent.
- 35 $\frac{1}{2}$  Summit and watershed ; view W. to the Egrigöz Dagħ. Easy descent through sparsely wooded hills down a stream.
- 39 **Yarysh** village. Track continues down the stream. General direction now W. to SW.
- 41 Track leaves the stream, ascending to l. from it.

miles	
42	Summit.
42½	<b>Akche Kõi</b> , village of stone houses. Descent into a valley.
43	Foot of descent ; stream to r. Track again ascends.
43¾	Summit. <b>Köprüjik</b> 1 mile to r., down the Akche Kõi valley. Long descent.
46¾	Short rise over a hill.
49	<b>Emed</b> .

## ROUTE 116

## USHAK—AFIUN KARA HISSAR, 68 miles

This road is probably fit for wheels throughout in dry weather. As far as Islam Kõi (mile 19) it traverses rich open undulating country, partly through fine valonia forest. There are no steep gradients on this stage, but the road may be slippery after rain. From Islam Kõi, according to the most reliable map, the chaussée ascends the well-wooded valley of the Hammam Su to Tolumbunar, where the watershed is crossed, and then descends the valley of the Porsuk Chai to Küchük Kõi, where it appears to end. The route detailed below leaves the Hammam Su valley about 8½ miles beyond Islam Kõi and runs E. over undulating country via Chalyshlar and Duzaghach into the Sychanly Ova, across which there is a choice of roads. The main one skirts the northern edge of the plain and passes over into the plain of Afiun Kara Hissar by a gap in the low ridge bounding the Sychanly Ova on the E.

The route is compiled from reports dating from before the construction of the railway, and there are no reliable details as to points of crossing.

0	<b>Ushak</b> .
1¾	<b>Kiljan</b> village to l. on the hill-slope.
2¼	<b>Göker</b> village to l. on the hill-slope.

miles

4½

? Iki Seraï village 1 mile to r.

5½

Stream (dry in summer). A short distance farther on is **Giaur Ören** close to l. .

7

Stream.

7¾

**Orta Kõi** ¾ mile to r.

10

Small village close to l.

10¼

Summit of a ridge. From this point Ushak reads 267° and the road in front 192½°.

10½

Head of a stream on r. flowing SE.

12

Reach the bank of a tributary from the r. and descend the stream.

12¼

The tributary joins another stream, which the road crosses. **Kyzyl Hissar** lies ¼ mile to l. upstream, and a road runs down its valley.

Road ascends and crosses another stream and shortly afterwards ascends a ridge, following a water-course.

13½

A road from **Derbend** village, ½ mile to l., crosses the present route, which here descends a tributary.

14¼

Cross a stream flowing S.

14½

Summit of a ridge. From this point **Islam Kõi** reads 71½° and the road behind 259°.

Road descends the ridge with a tributary to l., crossing it after some distance.

16

Cross a stream.

17

Cross a stream flowing to **Banaz Kõi**.

18

**Banaz Kõi** to l. on the S. side of a slope between two valleys.

19

**Islam Kõi**.

24

**Iki Bunar** mineral spring appears to be about this point.

27½

About here the present route leaves the **Hamman Su** valley.

28

Cross a stream. Long gradual ascent along a ridge.

32

Watershed.

33

Cross a stream, and another (dry in summer) a little

miles

- farther on. Road then ascends over a spur and crosses another stream.
- 35½ Cross a watershed.
- 37¾ **Chalyshlar** village ½ mile to l.
- 40¼ **Günei** village.
- 40½ Cross a good stream which comes down a gap behind Günei.
- 42 Cross a stream from **Karaja Ören** village to l.
- 42¾ Cross the **Dolai Chai**.
- 44½ **Duzaghach** village.
- 46 Cross a stream.
- 53 **Bulja** village a little to r.
- 54½ **Balmamut** village. The drainage of the Sychanly Ova escapes through a gap in the ridge to l. towards the Dolai Chai.
- 56½ Small round marshy lake to r.  
Road ascends the low ridge which bounds the plain on the E.
- 58 About here the road from Dineir to Afiun Kara Hissar comes in on the r. (see Route 174, mile 60).  
Route crosses the ridge and winds down towards the Kutahia chaussée (see Route 120). In dry weather the usual route after the chaussée is reached is straight across the plain.
- 68 **Afiun Kara Hissar**.

## ROUTE 117

## TOLUMBUNAR—KUTAHIA, 46 miles

This is a pack-route as far as mile 31¾. The country is fairly easy, and none of the gradients appear to be difficult. The going is heavy at the N. end of the Altyn Tash Ova owing to the marsh.

Supplies in moderate quantities should be obtainable throughout. There is little timber along the route. Water is obtainable from streams at fairly frequent intervals.



miles

- 0      **Tolumbunar.** Track ascends gently N. up a ridge, which forms the easternmost outlier of the Murad Dagħ. The hill falls gently W. and is covered with cultivation. A quarry is passed.
- 2½      Broad summit, alt. 4,700 ft. In front is a wide plain in which lie several villages. On the S. and E. the plain is bounded by the low hills of the plateau, to N. and W. by higher hills stretching W. to the Murad Dagħ.
- 4      Track descends N. through pine scrub, past a yaila. **Aghach Kōi**, alt. 3,865 ft., at the foot of the slope.
- 6½      Track runs N. through plain, partly cultivated, partly fallow. To r. in the plain are several isolated hills. The surrounding slopes are covered with undergrowth. The drainage of the plain flows partly S. to the Porsuk Chai, partly N. and NE.
- 9      To l. is a hill terrace broken into low undulations. Pass the bottom of a large fertile side-valley from the W., down which comes the **Uyusular Chai**.
- 9½      The Uyusular Chai turns N., and the track follows its r. bank down a narrow valley.
- 11½      Valley widens; cultivation here; on either side are high scrub-covered hills.
- 13¾      **Abia**, alt. 3,445 ft., poor village on the site of the ancient Appia. The valley runs NE., gradually widening into the plain of Altyn Tash.
- 18      Track bends N., crossing the river by a stone bridge; three of the arches are ancient, and the other piers are built of the old materials. The path now lies over a low terrace which stretches E. to the Altyn Tash Ova. It is cut by a number of parallel valleys.
- 18      Highest point of terrace, alt. 3,860 ft., about 450 ft. above the level of the plain; scrub and many junipers. The hills on the E. side of the plain are bare.

miles

- 21      Reach the plain. The plain is undulating, with a gentle slope to NE., and has been formed not by alluvial deposit but by erosion. There is cultivation in the depressions, while the undulations are steppe-land.
- 22 $\frac{1}{4}$       **Gökcheler** village; very broad low tumulus to r. The plain becomes more uniform and cultivation more extensive.
- 24 $\frac{1}{4}$       Cross a stream. **Issigaly**, Muhajir village upstream to l.
- 26 $\frac{1}{4}$       Track now crosses a spur of a rather higher terrace, and descends again to the plain. It winds round the edge of a marsh on the r.
- 26 $\frac{1}{4}$       Cross the **Kyz Gök Su**, a tributary of the Porsuk Chai, which is said to rise from a spring 1 $\frac{1}{2}$  hr. distant. **Ada Köi**, alt. 3,350 ft., on an isolated hill on the l. bank.
- 29 $\frac{1}{4}$       The plain now comes to an end. The Porsuk valley becomes so narrow that the track has to ascend along the western slope, rising gradually through scanty scrub vegetation. The river flows with a slow current through the defile.
- 29 $\frac{1}{4}$       Summit, alt. 3,980 ft. Cross a stream and descend gradually N. by E. down a side-valley.
- 31 $\frac{1}{4}$       Track joins the chaussée from Gediz to Kutahia. The road now follows the Porsuk Chai valley, which here widens. The current at this point is swifter than through the defile.
- 33 $\frac{1}{2}$       Mill at the mouth of a side-valley from l.
- 37 $\frac{1}{4}$       **Yokary Porsuk** village to r. on a small r.-bank tributary. The valley again closes in, with steep walls, still, however, leaving a small level floor.
- 39 $\frac{1}{2}$       Road joins the chaussée which runs from Kutahia to Altyn Tash and Afün Kara Hissar (see Route 118, mile 6 $\frac{1}{2}$ ).
- 46      **Kutahia.**

## ROUTE 118

## KUTAHIA—ALTYN TASH, 28 miles

This road is probably fit for wheels throughout, but there is no information as to its quality. Supplies are fairly plentiful for the first few miles through the plain of Kutahia. At mile 4 the alluvial plain is left, and most of the rest of the journey, till about mile 22½, lies across monotonous limestone country little cultivated except in the valleys.

There appears to be practically no timber along the route. The hills which lie on the r. for a large part of the way have a scanty growth of low shrubs. The Porsuk Chai is perennial, and there are springs at miles 10½ and 13. The smaller streams are probably dry in summer.

miles

- |     |  |
|-----|--|
| 0   | <b>Kutahia.</b> Road follows the edge of the plain SW.   |
| 3½  | Cross a stream.  |
| 4   | Round isolated hill in the plain to l., and another of oval shape farther NE. Road turns S. and winds up the slope.  |
| 5½  | Descend SE. into the valley of the <b>Porsuk Chai</b> ; the valley-walls are steep.  |
| 6½  | A chaussée comes in on the r. (see Route 117, miles 39½–31½; Route 115, miles 15–25; and Route 114, miles 21–38).  |
|     | Bridge over the river, alt. 3,210 ft.; scanty shrub vegetation; mineral spring on r. bank (temperature 71·6° F.); mill and farm near.  |
|     | Road runs SSE.   |
| 8½  | Reach the foot of a line of hills running S. and rising about 1,000–1,300 ft. above the plateau. Alt. here 3,760 ft. Road continues along the plateau at the foot of the hills, crossing the easy partly cultivated valleys which come down from them. |
| 10½ | Spring in a valley.  |

miles

- 13 Cross a broad valley depression in which is **Khan Ana Sultan** near a spring and an ancient mosque.
- 14½ Tekke among junipers. The country now has the quite uniform character of steppe-land.
- 16 Cross a broad valley, up which lies the small village of Duvarlar 1 mile to r. Beyond it the hills rise to the Omerhaba peak.  
Road ascends gently.
- 18 **Devrend Gedik**, Muhajir village in a deep saddle, alt. 3,920 ft., in a spur running E. from the hills on the r.  
Road bends round to S., down a broad valley with a stream on the r. The hills to r. here extend S. as the Akchal Dag.
- 21¼ Cross a stream ; the valley widens into a plain.
- 22½ Cross a second stream and enter a plain which runs S. towards the Porsuk Chai.
- 25 **Akyrykky** village. Road ascends over the foothills of the Elmaly Dag, which lies to E.
- 27 Reach the plain of the Porsuk Chai. About here the road probably branches to r. from the chaussée, which continues E. and then SE., skirting the low hills on the E. side of the plain.
- 28 Cross a small stream to **Altyn Tash**, a village of about 40 houses ; many ancient remains here. The village mosque is almost entirely built of stones from ancient buildings. Behind the mosque the stream is crossed by a bridge, probably of mediaeval construction. The evidence available does not show whether it is still used for traffic.

## ROUTE 119

## KUTAHIA—EIRET

## OVER THE ELMALY DAGH, 42 miles

This is not a regular track, and is given here simply for the details of the Elmalý Dagh and surrounding country. The country traversed is little cultivated, and there is practically no timber.

miles

- |     |   |
|-----|---|
| 0   | <b>Kutahia.</b> For the first 18 miles see Route 118.   |
| 18  | <b>Devrend Gedik.</b> Present track bends to l. from the chaussée. The ground slopes gently SW. The landscape is bare except for scanty patches of cereal cultivation.  |
| 22½ | <b>Sevdi Kõi,</b> alt. 3,610 ft. Track runs SE. across small valleys towards the foot of the Elmalý Dagh.   |
| 25  | <b>Yaila,</b> small village at the foot of the mountain.<br>Track ascends S. through scanty oak and juniper scrub; no timber.   |
| 27  | <b>Kislejik Tepesi</b> summit, alt. 4,710 ft.<br>Turn E. towards a higher peak.   |
| 29  | Summit, alt. 5,110 ft.; ruins of buildings here.<br>The plateau country to S. is bounded on the E. by separate groups of hills, behind which rises a higher range; on the SW. rises the uniform wall of the Elbilak Dagh.<br>Track winds down the mountain ESE. |
| 30½ | <b>Kadymursal,</b> alt. 3,845 ft., at the SE. end of the mountain.<br>Track now runs SE. down an easy valley. The country is treeless; cultivation here and there.  |
| 35½ | Cross a stream which comes from the hills on the E. and flows W. to the Porsuk Chai. The valley-floor is marshy, alt. 3,480 ft.   |

miles

Track crosses to the S. side of the plain and ascends S. on to the plateau.

36½ **Karaja Akhmed** village. Track continues over low undulations.

42 **Eiret**, alt. 3,640 ft., at the upper end of the Altyn Tash Ova. The chaussée from Kutahia to Afiun Kara Hissar passes close to the village (see Routes 118 and 120). On the W. side of the chaussée rise the slopes of the Elbilak Dagħ, covered with oak scrub. The mountain is crossed by a pass SSW. of Eiret, alt. 4,380 ft., above which the hill rises 600–700 ft. From the pass a track leads down southwards, first over bare ground and then through thin juniper scrub and some cultivation, to a spring beside the Yürük village of Mullaoghlu Chiftlik. From there the country down to the railway is generally bare and uncultivated except in the valleys.

## ROUTE 120

### ALTYN TASH—AFIUN KARA HISSAR, 33 miles

This route is a chaussée except for a short distance at the start, being the continuation of the carriage-road from Kutahia, which passes a mile or two distant from Altyn Tash, skirting the E. side of the plain. There are few details available regarding it, and none as to its present condition.

Supplies should be fairly plentiful. There is no information regarding timber or fuel.

Route runs along the foot of the slopes which border the Altyn Tash Ova on the E., passing the villages of **Tatar Mahmud** to l. (1 hr.), **Osmanjyk** (2 hrs.), and **Eiret** (3½ hrs., 12–13 miles). Here the plain comes to an end. The road continues down the W. side of a stream valley along the foot of the **Elbilak Dagħ** to r. The valley narrows after about 4 miles. An ascent follows up the **Kyzylja Derbend**, after which the road descends,

passing a spring, down a small stream valley into the valley of the **Dolai Chai**, which is crossed by a bridge, **Bekji Köprü** (about 23 miles). A little farther on the road bends SW. across the railway towards the W. side of the Dolai Chai Ova in order to avoid the marsh which covers a large part of the SW. corner of the plain. Skirting the marsh it turns E. after some miles along the foot of the hills on the r. to **Afiun Kara Hissar**.

The total length of the route, according to the most recent map, is about 33 miles.

## ROUTE 121

SMYRNA—CHESHME, 52 miles

This road is a chaussée all the way. It is good and fit for motors as far as Vurla (mile 23), and passable from Vurla to Cheshme.

A fair amount of supplies is procurable in the neighbourhood of Vurla, and small quantities should be obtainable throughout most of the rest of the route.

miles

- |     |  |
|-----|--|
| 0   | <b>Smyrna.</b> Chaussée runs through the suburbs of Karatash and Göztepe, and then along the coastal strip, crossing several streams. <b>Balchova</b> and <b>Iliza</b> lie to l. at the foot of the Kyzyl Dag. |
|     | From Balchova an alternative road to Vurla runs over the hills, passing N. of Payemblü. It goes by Potamia (see mile 15½ below) and Yelki (see mile 18).   |
| 6½  | <b>Narly Dere</b> village. <b>Sanjak Kale</b> on a promontory ¾ mile to r. <b>Yekidikli</b> ¾ mile to l., on a stream which comes down a valley from SW.   |
| 10  | <b>Hagios Georgios</b> monastery to l.   |
| 12  | Stream.  |
| 13¾ | Stream. <b>Kilisman</b> village 1 mile to l. upstream on the l. bank. A chaussée runs up the valley and over the watershed to Sivri Hissar (see also Route 122, mile 20).                                      |

miles

- 15½ Cross the **Chamly Chai**, which comes down an easy valley from Chamly about 4½ miles S. **Potamia** village lies about 1½ mile upstream on the r. bank.
- 18 Stream. **Yelki** village 1½ mile S.
- 20½ **Vurla Scala**, landing-stage for Vurla. Road now runs S.
- 23 **Vurla**, alt. 245 ft., head-quarters of a kaza in the merkez-sanjak of Smyrna; P. and T.; population, 6,000–10,000. The chief local products are cereals, raisins, and olive-oil. Road turns W.
- 23½ Stream. Road runs across a fruitful plain; vine and cereal cultivation; some olives.
- 25 Road rises over a low elevation.
- 26¼ Reach the plain bordering the Bay of **Gülbaghche**. Some vine cultivation.
- 27¾ Stream. The plain here is marshy, the water coming from a spring to SW. used by the peasants for irrigation.
- 28½ Enter a pass in the hills; small guard-post, commanding the pass.
- 30¼ Reach the plain of the lower valley of the **Tartar Dere**. **Gülbaghche** village to r.
- 30½ A track comes in from Gülbaghche (see Route 126).
- 31 Cross the stream and turn SW. up the valley.  
The stream is apparently nearly dry in May in this part of its course.
- 31¾ Cross a tributary of the Tartar Dere.
- 32¾ Spring on r.; the stream here and higher up contains water in May; vine cultivation in the valley plain. The mountain to the S. is partly wooded with firs.
- 36½ **Pente Pigadia** ('Five Springs') **Kahve**, alt. 530 ft. **Zeitunly**, Turkish village ½ mile to l. **Pyrgi**, Greek village 1 mile to r.

About here a track branches to l. It runs first



miles

down a stream valley SW. to **Derebashy** village. The valley there widens, and the track, leaving it, runs over low hills to an extensive flat basin in which is **Alisary Köi**, a poor village of a few houses. A little farther on is the bed of a lake, which dries up in summer. There is some vine cultivation here. The track then runs NW. and finally W., joining the chaussée apparently about Hagios Nikolaos (see mile 45½ below).

Road crosses a low ridge W. into a small plain.

38 Cross another low rise into a valley with a stream, which the road follows W. for some distance.

39 **Üvetta**, a few houses. Road bends round to SW.

41 Leave the stream and continue SW. over the hills.

43 Enter a large valley which runs N. to the important village of Reizdere, situated about 2 miles distant on a low height.

Road now runs across a small plain partly marshy, partly cultivated with vines.

45½ **Hagios Nikolaos** monastery on l., surrounded by high walls.

46½ **Alatsata**, large Greek village, head-quarters of a nahie. The chief trade of the place consists in agricultural produce, mainly raisins and aniseed.

Road now runs NNW.

48½ **Ilia**, small health resort on the coast, near sulphur springs, which make the shore marshy; a number of villas belonging to Smyrniotes.

Road runs NW. across the plain and over a low hill, passing the monasteries of **Hagios Dimitrios** and **Hagios Georgios**.

52 **Cheshme**, Greek port on a fine natural harbour; head-quarters of a kaza in the merkez-sanjak of Smyrna; P. and T.; population given in 1914 as 15,000 (probably too large an estimate), partly Christian

miles

Greeks, partly Moslems. The latter are largely descendants of Mohammedans who came from the Peloponnese in 1821, and many still speak Greek. Trade consists mainly in fishing and the export of raisins.

In the town is a large well-preserved castle with towers, of quadrangular form, enclosing an inner quadrangle.

## ROUTE 122

SEVDI KÖI—VURLA, 26½ miles

This is a pack-route except for the last 1½ mile. Supplies are fairly plentiful for the first 6 miles or so, and from Chamly (mile 20) to Vurla. Along the intervening stage of the route a few cattle might be obtainable, but very little corn. The country traversed is well wooded with timber and scrub.

- |    |  |
|----|--|
| 0  | <b>Sevdi Köi</b> , alt. 500 ft., large Greek village, connected by a short branch line with the Ottoman railway at Kazamir station.                                  |
|    | Track runs SE. across forehills cultivated with vines, olives, and cereals.  |
|    | An alternative track runs more to the E. along the foot of the hills.  |
| 2  | Cross a steep-sided gorge, <b>Chatalkaya</b> . Ascend again over a broad spur and across another valley. The hill-slopes are gentle and thickly covered with maquis. |
| 5½ | Cross a stream in a broad cultivated valley.   |
| 6¼ | <b>Sanda</b> , a few houses to r.  |
| 6¾ | Spring, alt. 695 ft. Track bends W. up the slopes; winding path, sometimes through pine forest.  |
| 10 | Summit, alt. 2,560 ft.; the ridge of Kyzyl Dagħ rises gradually to N.  |

miles

- Track now leads WNW. round the head of a valley running N.
- 12 Summit of a second ridge, alt. 2,235 ft. A short distance farther, on the r. is **Effenchukur**, a small village; gentle hill-slopes with scanty pasturage and some pines. There was formerly a considerable amount of raisin culture in this neighbourhood, but in 1901 it was reported that the vines had been completely destroyed by the phylloxera. The population is poor and engaged mainly in cattle-rearing.
- Track continues WNW., descending gradually over gently undulating plateau.
- 13½ **Sigirkuru** village.
- A track here branches SW. and then by a winding path W. by S. past the villages of Gürdenje and Göljök to **Olamysh**. From there it turns S. to **Sivri Hissar**.
- Track descends into a deep valley; the slopes are steep and covered with pines, valonias, and olives. From the summit on the W. side Payemblü village is seen high on the slope to N. lying among valonias. Behind it is a broad ridge dominated by a rough limestone range running NNE. The twin peaks of Dyo Adelpia ('Two Brothers') belong to this range. South-east of it and NE. of the point here reached on the route is a rounded summit of about 3,500 ft., probably the highest in the Kyzyl Dagh.
- 17 Summit, alt. 1,545 ft. Track now descends, at first gradually and then steeply.
- 20 **Chamly**, Turkish village in a broad valley among valonias, vineyards, and gardens.
- A chaussée from Kilisman on the N. coast crosses the present route here. It runs up the valley and over a low watershed to **Sivri Hissar**.

miles

- Track crosses the valley. The hills on the W. side are covered with maquis and occasional cultivated fields and vineyards. Cross the Chamly Chai and continue NW. up the slopes above the l. bank past a spring.
- 22½ Summit, alt. 795 ft. Track descends cultivated slopes SW. into a broad valley.
- 23½ Cross a stream. Direction now WNW. across a broad hill through vine and olive cultivation.
- 25 Join the track which runs from Sivri Hissar to Vurla.
- 26½ Vurla, alt. 245 ft.

## ROUTE 123

CHESHME—EGRILIMAN—DENIZGERENI,

32½ miles

This road is fit for wheeled traffic for the first 12 or 13 miles. The going is bad after mile 18. The villages passed are small, and the population are mainly engaged in fishing or vine cultivation. There does not appear to be much timber, and most of the streams are probably dry in summer.

- 0 **Cheshme.** The chaussée to Alatsata is followed for the first few miles (see Route 121, miles 52–48½).
- 3½ **Iliza** sulphur springs. Track bends l. from the chaussée. It now follows the general line of the coast, cutting across the numerous promontories.
- 4½ Cross a low ridge and descend into a small plain.
- 5½ **Reizdere**, large village 1 mile E.
- 6½ Hot spring on l.
- 9½ Cross the stream from Üvätta (see Route 121, mile 39); the stream contains water in May. To E. is a high limestone mountain.
- 12½ Cross a stream which flows down a broad cultivated

miles

valley into a small bay on the l. The lower part of the valley is marshy owing to a large spring on the r. In front are the white houses of **Lytri**, on the site of the ancient Erythrai, built along the seaward slopes of a hill above the bay. The ancient ruins are used as a quarry. The modern village is poor. The inhabitants are Greeks, and employed mainly in fishing and the coastal trade. Off the bay lie several islands, partly cultivated. The position of Lytri affords a fine view W. over the sea and islands to Khios and N. to the Boz Dagh.

Passing the hill of Lytri the track runs NE. through a small plain cut off from the sea. About here a road used during the war in connexion with the defences on Cape Keretses branches to l.

15½

**Mavroyanni**, small place (? to r.); manganese and zinc ore here.

18

Cross a large stream from a lukewarm spring on r. The stream flows SW. through a small plain into Mavrovuni Bay. Near the lukewarm spring is one of normal temperature beside a few houses lying among vine cultivation.

Track now runs NW. along the coast by a wretched path, up and down over ridges and valleys. Vines are grown at the mouths of the valleys.

24½

Reach a small plain, at the W. end of which, about ¾ mile distant, is **Meli Scala** (a single hut in 1901). On the W. it is protected by the limestone peninsula of Mavrovuni.

24¾

Cross a stream-bed (dry in May) at the mouth of a large valley.

25½

**Meli**, Greek village, alt. 400 ft., on a small hill terrace. The place was founded from Kardamyli in Khios after the massacre of 1821. It owns a few kaiks; some vine cultivation.

Track now runs W. over a gentle rise and then



PLATE IX



WESTERN COAST OF KARABURUN NEAR EGRILIMAN

(To face p. 383)

miles

along the coast NW. The country is gently undulating, covered with scrub; raisin cultivation in the valleys.

29 $\frac{1}{4}$ 

Cross a small plain.

30

**Egriliman**, small village on an inlet running N. and S. A large valley runs down to it from the E.

Track runs along the coastal slope over low spurs and small valleys.

31 $\frac{3}{4}$ 

Cross a small plain.

32 $\frac{1}{2}$ 

**Denizgereni**, small Greek port.

## ROUTE 124

### DENIZGERENI—AKHYRLY, 13 miles

This is a hill track through sparsely inhabited and bare country. Supplies are scarce, and there is no evidence to show whether the streams carry water in summer. There is an English cinnabar mine near Monastir (see mile 10).

0

**Denizgereni**. Track runs E., at first across the small plain and then up the hills.

1 $\frac{1}{2}$ 

**Küchtük Baghche** village, alt. 535 ft.; population partly Greek, partly Turkish.

Track continues E., ascending gradually across a gently undulating plateau, bare except for shrubs.

3 $\frac{1}{4}$ 

Cross a valley with stream running NNW.

5 $\frac{1}{2}$ 

Reach the eastern and higher edge of the plateau near some tall blocks of stone; fine view to E. down into a valley which runs S., and to W. past Meli (see Route 123, mile 25 $\frac{1}{2}$ ). On the E. side of the valley the slopes rise gently except where they are broken by steep rugged seams of limestone. Behind them rises the grey limestone wall of Boz Dagħ running N. and S. with no definite peak. The highest point is in the middle, alt. about 3,900 ft. The steep slopes are unbroken except for short watercourses



miles

and are quite bare of trees. Here and there are patches of scrub.

Track turns first N. and then E. round the head of a valley.

- 7      **Yaila**, small village, alt. 1,215 ft.; population mainly Turkish. Direction now NE. across the head of a valley running N.

- 8½      General direction changes to N. under the western slope of the N. end of Boz Dagħ; some windmills here.

- 10      Cross a col, alt. 1,660 ft.; from here a deep, steep-sided valley runs NE. to the coast; above it on a mountain terrace lies **Monastir** village. In the valley below the village is a cinnabar mine belonging to Messrs. Whittall.

Track winds down the W. side of the narrow rugged valley.

- 13      **Akhyrly**, alt. 230 ft., at the mouth of the valley, head-quarters of the kaza of Karaburun, a name also given to the village. The population is mixed Greek and Turkish. A small plain, bounded by limestone hills, extends E. to the sea.

## ROUTE 125

### AKHYRLY—GÜLBAGHCHE, 28 miles

This was formerly a horse-track throughout, but during the war it was made fit for heavy artillery from Cape Artes, a short distance N. of Murdivan Scala (see mile 10½ below). The population of the villages passed are engaged mainly in vine and olive culture or in fishing and the coastal trade. Supplies are scanty, though moderate quantities might be obtainable in the neighbourhood of Murdivan (see mile 12) and Gülbaghche (mile 28). Water is obtainable from streams, and there is a spring at mile 23.

miles

0

**Akhyrly.** Direction SSE., following the general line of the coast. Track runs along a well-defined terrace on the E. slope of Boz Dagħ; several Turkish villages. To r., stretching far to the S., is seen the terrace (about 1,600 ft. high) on which lies Monastir village (see also Route 124, mile 10).

2½

**Tepejik,** Turkish village, alt. 570 ft. Track descends gradually towards the coast through hills planted with vines and olives.

6¼

**Kössedere Scala.** Direction now SE. over two ridges.

10¾

**Murdivan Scala**; a few shops and kahves; some cultivation.

The road is now fit for wheels. It turns SW., running inland over cultivated hills.

12

**Hajilar,** Turkish village, one of several villages collectively called **Murdivan**. They lie from N. to S. near one another against the forehills. Those lying S. of Hajilar are, in order, Teke (Greek), Chatalkaya at the mouth of a valley (Turkish), and Yenije Bunar (Greek).

Road runs S. past the villages just mentioned, skirting a broad hill terrace.

14½

Direction now SW.

15¾

**Körfesi Scala** on the bay of the same name; some stone quarries in the neighbourhood.

Road again winds S. high above the shore.

19½

Enter a small plain and pass **Balyklova Scala**. The Turkish village of Balyklova lies ¾ mile to W.

20¼

Cross a strong stream from the SW. at the S. edge of the plain.

Road continues ESE. and then SSE. above the shore, crossing ridges and small valleys from the mountain to r.

23

**Karabunar** spring on a limestone hill lying in a small plain on the coast.

miles

- 25½      Road descends to a gradually widening plain and runs S. through it.
- 28      **Gülbaghche**, Greek village.

## ROUTE 126

GÜLBAGHCHE—SIVRI HISSAR, 17½ miles

This is not a made road except for two short stretches of chaussée, from mile  $\frac{3}{4}$  to mile  $2\frac{3}{4}$  and from mile  $14\frac{3}{4}$  to mile  $17\frac{1}{2}$ . It should be passable for wheels in summer.

Supplies are fairly plentiful, and water should be procurable from streams. There is a spring at about mile 3, but no information as to whether it is fit for drinking purposes.

- 0      **Gülbaghche**. Track crosses the plain.
- $\frac{3}{4}$       Join the chaussée and follow it through the derbend (see Route 121, miles  $30\frac{1}{2}$ – $28\frac{1}{2}$ ).
- $2\frac{3}{4}$       Guard-house. Track leaves the chaussée and runs SE., at first across ground made marshy by a spring on the r.
- $3\frac{3}{4}$       Cross a stream and turn E. across a plain with vine and cereal cultivation.
- 5      Ascend over a low rise and descend SE. into the plain of Vurla.
- $8\frac{1}{2}$       **Sharabdalar**, poor Turkish village, alt. 185 ft., at the S. end of the plain. Direction now S. down a valley, which becomes gradually narrower; cultivation in the valley-bottom, maquis vegetation on the slopes.
- $9\frac{1}{2}$       A broad valley depression on the r. from the plain crossed between miles  $2\frac{3}{4}$  and 5.
- 11      Track turns E. and descends into a small plain, partly cultivated with cereals, partly pasture.
- $12\frac{1}{4}$       Turn SE. across several ridges close to the shore.
- $14\frac{3}{4}$       **Sighajyk**, small Turkish town on a small bay. The place is enclosed by a quadrangular wall and has

miles

a tower commanding the harbour. The coast-line S. of Sighajyk forms a hilly peninsula, and S. of the town on the eastern slopes are the ruins of the ancient Teos. At the S. end of the peninsula is a lignite mine, on the Sultan's Civil List. The seams are not extensive.

Turn E. along the chaussée through the plain which runs inland from Sighajyk.

15½ Pass an isolated hill in the plain and continue E., skirting the hills on the l.

17½ **Sivri Hissar**, alt. 245 ft., head-quarters of a kaza in the merkez-sanjak of Smyrna; P. and T.; population about 4,000, half of whom are Moslems. The chief local products are cereals and olives.

## ROUTE 127

SIVRI HISSAR—VURLA, 10½ miles

This road is marked on the maps as a chaussée, but it appears to be metalled only from Sivri Hissar to **Hereki** (3½ miles), up to which point it is part of the road referred to in Route 121, mile 13½, and Route 122, mile 20. Beyond Hereki it continues as a track to **Vurla**. The distance is about 10½ miles.

## ROUTE 128

SIVRI HISSAR—MEGALA KIMITURIA, 18 miles

This is an unmetalled road throughout, but should be fit for wheels in dry weather. Supplies should be procurable in the three small plains traversed. There is a fair amount of timber, mainly valonias and pines. Most of the streams crossed are dry in summer.

B b 2

miles

- 0      **Sivri Hissar**, alt. 245 ft. Track runs S. through the plain, crossing a stream-bed (dry in May); valonias and cereal and vine cultivation.
- 1 $\frac{3}{4}$       • Ascend SSW. over a low hill and then along the foot of a broad terrace about 300 ft. high on the l.
- 3 $\frac{3}{4}$       Turn SSE. along the coast, crossing a large valley; fine valonia forest begins; pines farther on.
- 9 $\frac{1}{2}$       **Hypsili**, alt. 585 ft., double village of Turks and Greeks lying on a commanding ridge.  
Track runs E. through gently sloping pine-covered hills.
- 11 $\frac{1}{2}$       Enter a plain with cereal, valonia, and olive cultivation. A little farther on are hot springs, **Ilja Hypsili**, at the foot of the hills. They leave a deposit containing iron, and their overflow forms a stream which drives several mills.
- 12      Cross a stream from a broad valley on the N. The plain is now treeless, with extensive pasture-land.
- 14      Cross a stream-bed (dry in May); along the banks is a thick growth of olives, valonias, high maquis, and climbing plants.  
A little farther on the track touches an isolated hill, on which rises a spring. To r. are the ruins of Lebedos. The hills for a short stage now approach the shore.  
Track crosses the spurs and bends round to NE. along the N. edge of a small plain. The shore to r. is formed by a line of dunes with marsh-land behind them.
- 18      **Megala Kimituria** (Gümüldür) at the mouth of a fairly large valley from the N.

## ROUTE 129

## MEGALA KIMITURIA—AYASOLUK, 34 miles

This road is fit for wheels for at least the first 7 or 8 miles, and probably as far as Velika Kõi (mile  $19\frac{1}{2}$ ). It does not appear to be metalled, and in 1902 it was noted that the going was bad in a good many places, e.g. up the Takhtaly Chai valley (see mile  $1\frac{3}{4}$ ) and down the Alaman Boghaz (see mile 21).

Supplies should be obtainable in moderate quantities. There is a considerable amount of timber, mainly along the first 20 miles of the track. Water appears to be sufficiently plentiful from streams or springs, except through the passage of the Alaman Boghaz.

miles

- |                 |  |
|-----------------|--|
| 0               | <b>Megala Kimituria.</b> Road runs S.  |
| $1\frac{1}{4}$  | Mine (? lignite) on a spur which the road crosses. It was disused in 1901. On the E. side of the spur are veins of lead and calamine.  |
| $1\frac{3}{4}$  | Turn NE. up the large valley of the <b>Takhtaly Chai</b> ; to r. is the pine-clad <b>Karaja Dag</b> , alt. about 3,000 ft. The valley is at first broad, with vine and olive cultivation and pasture-land. Higher up it narrows to a ravine, with steep bare rock-walls, above which the slopes are wooded with pines. The stream is strong and bordered with fine planes. The road runs in places high up on the eastern slope. |
| $7\frac{1}{2}$  | Emerge on to the plain of <b>Jimovasy</b> . Several tracks probably lead up through the plain to Sevidi Kõi and Smyrna. A road fit for wheels runs via Malkajyk to Develi Kõi. Present route bends SE. round the foot of the hills.  |
| $11\frac{1}{2}$ | <b>Deirmendere</b> , Turkish village, alt. 500 ft. The village lies up the slope along a strong stream which rises from a spring some distance higher up and drives several mills.   |

miles

Track continues SE. over the foothills of the Karaja Dagħ, passing the ruins of Kolophon to r. ; cereal fields and olive groves alternate with fine maquis vegetation.

13½

**Yeniköi**, alt. 345 ft., Muhajir village in a small plain ; remains of pine forest among vine and cereal cultivation.

Track crosses the plain and ascends over a spur into another small plain. The Avjy Chai is crossed twice, the stream coming from the W. and here making a sharp bend round to S.

15½

**Damia** village. Track winds round the S. side of the plain through tobacco-fields.

17½

**Palamut**, small village at the foot of a spur from the N. The small settlements in this neighbourhood are inhabited by Yürüks.

Direction now almost due E. across another plain stretching N. towards that of Jimovasy ; valonias in the plain.

19½

**Velika Köi**, alt. 325 ft., small village at the SE. corner of the plain ; modern ruins.

Track turns SE. up the hills.

21

Cross a col, alt. 635 ft., formed by a broad depression between the mountain on the W. and the broad mass of the Alaman Dagħ to E. The hill-slopes are gentle and bare of trees.

Track descends through maquis SSE. down a stream valley (dry in May). This valley provides the shortest line of communication between Smyrna and Ayasoluk. The name given to it is **Alaman Boghaz**. The track is difficult, over slippery rock ; a few stunted pines in the valley-bottom.

23

Old covered-in Turkish cistern on l. ; Yürük encampments throughout the valley.

24½

Some emery mines to r. and l. The valley now begins to open out into the marshy Kayster plain.

miles

Track follows a stone causeway through the marsh. The causeway is built of ancient stones and runs in a straight line towards Ayasoluk; thick growth of reeds and rushes on either side.

26½ Reach firm ground and turn ENE. up the valley.

27 **Chorak Kõi** (Burkhanlar).

29½ Track here runs between a spur from the l. and an isolated hill beside the river to r.

31½ Cross the railway and then the **Küçük Menderez** by an old stone bridge immediately above the railway bridge. The stream here is muddy, with a swift current. A hill comes close to the river from the l.

Track now follows the line of the railway SSW. across the plain.

33½ Cross the railway a short distance above Ayasoluk station.

34 **Ayasoluk**, alt. 60 ft., small village, with mediaeval ruins, lying to E. of the hill on which are the ruins of Ephesus. The eastern part of the plain is marshy and covered with fig gardens, and maize, cotton, and tobacco are also grown; the western side is drier and grows cereals. The district is malarial owing to the neighbouring swamps.

## ROUTE 130

### AYASOLUK—SCALANOVA

*Via HASSAN BEY, 11 miles*

This road is fit for motor traffic. It runs at first W. through cultivated marshy plain, leaving the ruins of Ephesus to l. Then crossing the ancient harbour-canal and an irrigation-cut, it enters the broad valley of **Arvalia** (3 miles). A spring, **Hassan Bey**, is passed, and a kahve (5 miles), S. of which, about ¾ mile from the road, lies Arvalia village. Beyond



this the chaussée crosses a low elevation, from which a small valley runs down to the Kayster marsh, and descends towards the S. through another small valley with an ancient aqueduct on the l. to a bay surrounded by dunes ( $7\frac{1}{2}$  miles). After another  $\frac{3}{4}$  mile a stream is crossed which enters the sea just N. of Cape Otuzbir, and the road ascends over a hill and descends to **Scalanova** (11 miles).

## ROUTE 131

### SCALANOVA—AYASOLUK

*Via ORFALY, 13 miles*

This road is unmetalled. It runs SW. from Scalanova, crossing the valley which runs up S. from the town, and then, after ascending a side-valley in the same direction for some distance between cultivated hills, turns E. across the upper end of the valley.

The track now runs for some distance along the side of the mountain on the N., and a spring is reached at  $4\frac{1}{2}$  miles. The summit, alt. 995 ft., is crossed  $\frac{1}{2}$  mile farther on, and there is a slight descent NE. to the Circassian village of **Orfaly** ( $5\frac{1}{2}$  miles). The path now leads over gentle undulations in a NNE. direction towards the railway. At  $7\frac{1}{2}$  miles a rounded hill to r. is passed, the summit of which is encircled by an ancient wall, and the railway is reached near the station of **Azizie** ( $8\frac{1}{2}$  miles; alt. 760 ft.). Immediately beyond the station the railway enters a tunnel. The track keeps down the W. side of the valley, the **Derbend Dere**, passing a Roman aqueduct which spans it ( $9\frac{1}{2}$  miles). The valley is covered with a fine growth of maquis vegetation and now gradually widens into the plain. Fig plantations begin, and the path runs through cultivation to **Ayasoluk** (13 miles).

## ROUTE 132

AYASOLUK—SOKIA, 19 miles

This is a pack-route, of use chiefly for the transport of emery from the mines on the Gümüş Dagħ. Supplies are scanty, and there is little timber until about mile 13½.

miles

0 **Ayasoluk.** For the first 4½ miles see Route 131 in the reverse direction from mile 13.

4½ **Azizie** station, alt. 760 ft. ; a few modern houses, including that of Mr. Abbot. The small village of Azizie lies to E. of the railway on the mountain.

Track runs SSE., descending gently along the railway, which it crosses, to the plain of the **Derbend Chai**. A route which follows the stream valley diverges to l. (see Route 147).

6½ Cross the stream and then ascend ESE. up the scrub-covered hills on the S. After some distance the direction becomes SE., round the head of the **Deirmen Dere**, which runs down to the coast a few miles S. of Scalanova. The ascent becomes steeper.

10 **Pireyol** emery mine. **Gümüş Kõi** lies about ¾ mile E. in the valley of a small stream running ESE.

Track continues to ascend round the E. end of the Gümüş Dagħ past several small mines ; view E. over the ruins of Magnesia and the Maeander plain.

11½ Cross a stream valley. Track winds S. over the ridge and then SE. past **Gölyatak** mine, alt. 2,080 ft. ; fine view down to the plain. Then WSW. over the terrace on which Gölyatak mine lies and past another mine called **Kilisma**.

13½ Descend and cross a narrow valley, which runs down steeply to Kemer village on the chaussée between Balachyk and Sokia (see Route 148, mile 33½). Pine forest now breaks the bareness of the landscape.

miles

- |     |  |
|-----|--|
|     | Track runs S. over the hill on the W. side of the valley and descends steeply.   |
| 17½ | Mill to r. in a small stream valley.   |
| 18½ | <b>Kyzylkilisse</b> village on the edge of the plain. Track joins the Balachyk-Sokia chaussée (see Route 148, mile 36½). |
| 19  | <b>Sokia</b> , alt. about 160 ft.  |

## ROUTE 133

SOKIA—PLAKA, 9 miles

This track ascends the stream on which Sokia lies in a NW. direction and after about 1½ mile turns SW. up a side-valley, a track continuing WNW. up the main valley to the coastal plain and Scalanova. The lignite mine of **Meriantepe** is reached at about 4 miles from Sokia, and not far from the summit. From the mine a trolley-line about 5 miles long winds NW. down the western slopes and then runs straight across the plain to **Plaka**. The latter place has a jetty and warehouse and a briquette factory.

## ROUTE 134

PLAKA—DOMATIA, 13½ miles

This is a horse-track, the first 5 miles of which are passable for wheels in dry weather. Supplies are scarce except at Domatia. There is a considerable amount of timber on the Samsun Dag, and there are springs at mile 7½ and mile 11½.

- |   |   |
|---|---|
| 0 | <b>Plaka</b> . Track runs S. along the shore; grassy dunes to l. and behind them marshes and lagoons.   |
| 5 | <b>Giaur Changly</b> , Greek village a little inland on a large mound. The population is engaged chiefly in tobacco-growing and smuggling. Muslim Changly lies about 5 miles ENE. at the foot of the hills. |

miles

Track now ascends the Samsun Dagħ over into the next valley W. of Giaur Changly. On the W. side of this valley rises the **Madaras Dagħ**, alt. 3,465 ft. The path runs at first through maquis and then through pine forest and bracken ; general direction S.

7½

Spring.

8

Summit, alt. 2,400 ft. ; view down into the Maeander plain ; to S. the peninsula of Halikarnassos can be seen and the island of Kos. Direction changes to WSW. along the ridge at nearly the same level.

11½

Spring near the head of a valley running steeply down to the S. On the other side of the valley rises the highest peak of the Samsun Dagħ, **Ripanas Dagħ**, alt. 4,430 ft.

Track descends the valley through forest of pines and wild pears and, lower down, through vine and olive cultivation.

13½

**Domatia**, large prosperous village in the valley and on the slopes, alt. 465 ft. ; population entirely Greek.

## ROUTE 135

DOMATIA—SOKIA, 18 miles

This track is probably impassable in wet weather, and even in autumn it is difficult on account of the marshy nature of the ground. Supplies should be obtainable in small quantities, and there is abundance of fresh water from springs.

0

**Domatia**, alt. 465 ft. Track runs SE. towards the plain and then E. along the foot of the hills.

1¼

Large salt-spring ; the overflow runs into a small lake on the r.

1¾

Large freshwater spring, and beyond it a large number of others at the foot of the mountain ; they make the plain marshy.

miles

- 2 $\frac{1}{4}$       **Domusbergaz**, Greek village to l. ; general direction now ENE.
- 4 $\frac{1}{4}$       **Akbergaz** and the ruins of a fort to l. ; cereal cultivation and liquorice scrub in the plain ; many nomad tents may be seen.
- 7 $\frac{1}{2}$       Ruins of Priene (now called Samsun Kale) on a rocky terrace between two small valleys at the mountain-foot to l.
- 8 $\frac{1}{2}$       **Turus Deirmen**, small Greek village immediately E. of the ruins.
- 9      **Kelebesh**, Greek village beside some large springs high on the slope to l. Track continues along the foot of the hills ; going very bad.
- 12      **Kabaklybunar** spring at the foot of the mountain.
- 13 $\frac{1}{2}$       **Gümenes** village on the slope to l. Direction now NE.
- 16 $\frac{1}{4}$       **Yeni Köi** to l. and **Avjy Köi** a little N. of it. Track winds round a spur and runs N.
- 18      **Sokia**.

## ROUTE 136

## BURNABAD—MENEMEN, 19 miles

This route is a horse-track except for the last 4 $\frac{1}{2}$  miles. Supplies are scanty for the greater part of the journey. Timber and water are plentiful.

- 0      **Burnabad**, residential suburb of Smyrna, connected with the capital by a branch line ; many villas belonging to British families ; English church and schools.

Track ascends N. up the W. side of a broad stream valley, passing a reservoir (new in 1901) which supplies Burnabad with water. The valley then becomes narrow ; to r. are artificial caves in the limestone cliffs. The track ascends more steeply.

miles

- 4½ **Kyz Göl**, small lake with a dam to l., alt. about 2,000 ft. ; pine woods near.
- 5½ **Kyz Göl Yailasy** beside a spring, alt. 2,205 ft. ; many patches of pine forest.  
Track ascends over pasture-land past springs.
- 6½ Summit, alt. 3,230 ft. ; fine view S. to the Takhtaly Dagħ and N. to the Dumanly Dagħ. The peaks to l. are called **Lebleb Dagħ** and rise to about 4,000 ft.  
Track descends through fine pine forest.
- 7½ **Kara Göl**, small dark-coloured lake to l. surrounded by reeds and pine woods, alt. 2,650 ft. The lake is rather over ¼ mile long from E. to W. On its W. side rises a large conical hill, an outlier of **Lebleb Dagħ**. On the N. the ground falls steeply.  
The lake drains NW. as the result either of head-water erosion or artificial cutting. Track winds along the eastern slopes, descending gently. The valley gradually widens.
- 12 **Begir Kõi** and **Deïrmendere** on the E. and W. sides of the valley respectively ; cultivated fields and olive and valonia groves on the slopes. To l. are some isolated outliers, to r. a serrated line of hills called **Assar**.
- 14½ Cross the railway and turn W. along the chaussée from Manisa to Menemen (see Route 46). The Hermos valley here is well cultivated with cereals, vines, and olives.
- 19 **Menemen**, alt. 65 ft.

## ROUTE 137

SMYRNA—KASSABA, 36½ miles

This road is a chaussée and passable by motors as far as Nif. From there it is an ordinary track, though passable for carts. Supplies, timber, and water are plentiful.

miles

- 0      **Smyrna.** The road leaves the town by the caravan-bridge over the Melis Chai and runs through orchards and gardens across the plain near its S. edge, skirting the spurs of Takhtaly Dag.
- 1½      **Khalkabunar**, large spring.
- 2      Cross two streams, which run to the Arab Dere (see below, mile 4½). **Kukluja** village to r. on the slope.
- 4½      Cross the **Arab Dere**, which comes from SE. down a valley in the Takhtaly Dag and flows W. through the plain into the Gulf of Smyrna.
- 6½      **Ishiklar** village ½ mile upstream on the l. bank.
- 6½      **Bunarbashy** village ¾ mile to r. at the foot of the mountain. Broad strip of gardens here in the plain, watered by springs. The road runs through orchards of pomegranates. The rest of this upper end of the plain is occupied with tilled fields. The mountain to the S. appears as one great uniform mass of limestone.
- 7      **Hajilar** village to l. on the r. bank of the **Kavakly Dere**, which runs W. by S. to the gulf.
- 7½      Road crosses and then recrosses the stream.
- 8½      Upper end of the plain. Road rises over the hills separating the plain of Smyrna from that of the Nif Chai.
- 9½      Cross the Kavakly Dere just above the point where coming from SE. through orchards down a valley in the Takhtaly Dag it joins another stream from the NE.
- 10      Road crosses the NE. tributary.
- 10½      **Bel Kahve**, guard-house at the foot of a steep conical hill among evergreen scrub and olives.
- 11      Summit, alt. 860 ft. Magnificent view W. towards Smyrna. A strong wind from the sea blows through this gap in the hills, especially in good weather.
- 12      Road descends a stream valley.
- 12      Edge of the plain watered by the Nif Chai on the l. The ground on either side of the river sinks towards it

miles

in flat hills. Vine, corn, and olive cultivation in the plain; firs on the mountain-slope.

Road skirts the Takhtaly Dagh, here called the Nif Dagh.

13 **Tash Khan.** Direction alters to SE.

14½ Cross a tributary of the Nif Chai from the SW. Road continues along the edge of the plain, rounding a spur of the Nif Dagh.

17¼ Another tributary from the SW.

18 **Nif**, alt. 690 ft. Pop. two-thirds Turkish, one-third Greek. The town lies at the mouth of a narrow winding stream valley running SSW. into the Nif Dagh. Large mediaeval castle on a steep cliff on the W. side of the valley. Ruins of a Byzantine church and a rock chapel on the spur to W. of the town. Fine well-watered gardens in the plain.

19¼ Cross a tributary of the Nif Chai formed by two streams, the Saranta Chai and Karabel Suyu, from the mountains on the r.

21¼ Stream flowing to the Nif Chai; 3 others during the next 1½ mile.

22¼ **Meshle Tepe**, isolated hill in the plain ¾ mile to l.

23¼ **Armudly** village ½ mile to r. on the r. bank of the third of the streams mentioned under mile 21¼.

25 A track comes in on the r. from Fitrek (see Route 141, mile 10¼).

25½ Stream from the Mahmud Dagh on r. **Jamyly** village in the valley ¾ mile upstream; isolated hill in the plain 2½ miles to l.

26¼ **Ören** village. Road runs among olive, cherry, and poplar-trees.

28 Stream from S. down a valley in the Mahmud Dagh. **Sofular** village.

28½ Small stream.

29 **Parsa**, alt. 640 ft., market town on a small stream from the Mahmud Dagh; raisin cultivation. A



miles	track branches to r. over the mountain via Ovaşyk Kahve to Bayındyr (see Route 142).
30½	Small stream. Makhalas and Sarlar villages on the mountain to r.
31½	Stream. Road ascends over a spur from the r.
32¾	<b>Yürük Köi</b> on the Yrnamas Çai formed by brooks from the SE. and E. <b>Beyboinu</b> and <b>Tekke</b> villages 1 mile upstream on the l. and r. banks respectively. Road descends the stream valley NE.
33¾	<b>Yrnamas</b> village on r. ; Yaikine higher up to W. ; <b>Bosnak</b> on the hill ½ mile to l.
36½	<b>Kassaba</b> , alt. 235 ft.

## ROUTE 138

NİF—MANISA, 22 miles

This is not a metalled road, but it should be fit for carts in dry weather. A fair amount of supplies is procurable, and there is some timber and scrub along the route and on the mountain-slopes to l. of it. Water is scarce in summer.

0	<b>Nif</b> , alt. 690 ft. Track runs NE. across the plain, at first through gardens and then through vine and cereal cultivation.
2½	Cross the <b>Nif Çai</b> , alt. 475 ft. ; little water in June. Track bends E. by N. across the plain and then along the foot of the hills.
5	Track ascends ENE. and then NNE. over foothills broken by small valleys ; cultivated fields, vineyards, oak scrub, and scattered pines ; patches of pine forest on the mountain-slopes to l. A number of <b>Yürük</b> villages lie on the foothills.
5½	A track branches E., crossing the Nif Çai by a bridge and thence NE. and E. to Kassaba.
10	<b>İlija Köi</b> , alt. 800 ft. ; about 1 mile W. on the mountain-slope are some manganese workings.

miles

- 11½ **Bosh Kōi.** The ground here is barren and broken by ravines. To E. the Nif Chai breaks through some outliers.
- 12¾ **Karaoghlania,** large village inhabited by Turks, Yürüks, and Greeks.  
Track continues NE. through vineyards.
- 13½ Reach the edge of the Hermos plain and turn WNW. along the foot of the hills : tumulus on l.
- 14 Cross a stream-bed (dry in June).
- 15 Cross a second stream (some water in June).
- 15½ **Choban Isa Khan.** The hills on the l. now rise steeply from the plain.
- 16¾ Large spring forming a marsh. A short distance farther on is a rock tomb.
- 17¾ Pass the mouth of a valley from the SW.
- 18¾ Spring and marsh.
- 19½ Track runs now over undulating ground ; vineyards and gardens along the mountain-foot.
- 22 **Manisa,** alt. 230 ft.

## ROUTE 139

## MANISA—BURNABAD, 17 miles

The route detailed here is a horse-track. Before the war there was a chaussée running direct over the hills not far from the line of the present route. No details, however, are available regarding it, though it is probably the road which is reported to have been improved during the war.

Supplies are scanty for most of the journey.

- 0 **Manisa,** alt. 230 ft. Route runs SW. along the edge of the plain through vineyards ; cultivation to a considerable altitude on the mountain to l. ; fine pear-trees ; country-houses on the slopes, but no villages.

miles

- |     |   |
|-----|---|
| 1½  | <b>Bozköi</b> ½ mile to l. on a hill at the mouth of a valley.  |
| 2   | Ascend a spur into the <b>Sabanja</b> valley. <b>Kechili</b> village at the foot of the spur to r.<br>Track ascends SSW. up the valley, through scrub and occasional cultivation. |
| 5½  | <b>Sabanja</b> village.   |
| 6¾  | Guard-house. The country now is gently undulating plateau.  |
| 7½  | Summit, alt. 2,320 ft.  |
| 8   | Spring on r. Fine view now towards Smyrna and the Takhtaly Dagħ. The S. slopes of the hill are gentle.  |
| 10¾ | <b>Yaka Köi</b> to l.; alt. here 1,330 ft.<br>Track bends WSW. across valleys and low undulations.  |
| 12  | <b>Boznaki</b> village.   |
| 12¾ | Cross a col, alt. 1,230 ft. Track descends gradually down the slope through scrub, pines, and shrubs.   |
| 17  | <b>Burnabad</b> , alt. 105 ft.  |

## ROUTE 140

BUJA—FITREK, 15 miles

This track is simply a hill path and appears to be little used. It is given here for the description of the country round the Takhtaly Dagħ.

There is a certain amount of cereal, vine, and olive cultivation as far as Takhtaly Köi (mile 6½). A few miles farther the country is entirely uninhabited, even by nomads, until Fitrek is reached. Timber appears to be scanty.. Water is procurable from streams at frequent intervals.

- |   |   |
|---|---|
| 0 | <b>Buja</b> , alt. 310 ft., summer resort of English residents in Smyrna, lying among gardens about 4 miles from Smyrna. A short branch line connects it with the |
|---|---|

miles

Ottoman line at Paradisos station, and a chaussée runs on the N. side of the branch line and across the main line to join the chaussée from Sevdi Kõi.

Track runs SE., ascending gradually over undulating plateau broken by small valleys ; low maquis vegetation on the high ground, olives in the valleys. The grey mass of Takhtaly Dagħ comes gradually more clearly into view on the l.

2½ Cross a stream which comes from a spring, **Kangiol**, ½ mile to l.

4½ Track bends ENE. up the broad valley of the **Takhtaly Chai** ; cereal, vine, and olive cultivation. The stream carries a considerable volume of water.

5½ Cross a tributary.

6½ **Takhtaly Kõi**, scattered village on the lower slopes of the mountain, alt. 1,130 ft. ; direction now E. with a deep ravine on r.

7½ **Takhtaly Kale**, steep limestone crag to r. Direction changes to NE.

8 Abandoned manganese mine.

The landscape now is quite deserted, without a sign of habitation.

8½ Direction changes to SE. ; ascent becomes steeper.

10 Col in a ridge running SSW. from the summit of Takhtaly Dagħ, alt. 3,950 ft. The mountain rises to about 5,000 ft., and the ridge is broken by gullies.

Track descends SE. into the stream valley which separates the Takhtaly Dagħ from the Besholuk summit to SE. It then turns NE. above the r. bank of the stream.

11½ Cross to l. bank, alt. 3,350 ft., and ascend the slope SE.

12½ Summit, alt. 3,710 ft. The limestone peak of Besholuk rises on the r. to about 4,700 ft. ; view from here NE. over rugged limestone country down into the plains of Parsa and Kassaba. Track descends steeply.

miles

15

**Yokary Fitrek**, alt. 1,200 ft., small village in a valley depression at the foot of the mountain. **Ashaghy Fitrek** lies  $\frac{1}{2}$  mile to SW.

## ROUTE 141

FITREK—PARSA,  $14\frac{1}{2}$  miles

This appears to be a fairly easy track. There is a considerable amount of cultivation, mainly olive and vine, along the route. Pine woods are noted in the neighbourhood of the Karabel (mile  $2\frac{3}{4}$ ). A good many streams have to be crossed, but there is no evidence as to whether they carry water in summer.

- |                |  |
|----------------|--|
| 0              | <b>Yokary Fitrek</b> , alt. 1,200 ft. Track runs E. over low hills; olive cultivation on the high ground, olives and vines in the plain of the Fitrek Chai to r.   |
| $1\frac{1}{2}$ | Cross a stream running S. to the Fitrek Chai. Track ascends through pine forest.   |
| $2\frac{3}{4}$ | Track joins a path from Torbaly and crosses a col, <b>Karabel</b> , alt. 1,475 ft.<br>Descent NE. down a valley.   |
| $4\frac{1}{2}$ | Rock monument to r. The traveller whose description is here followed continued down the valley for some distance and then turned SE. across the plateau. There may be a shorter track running in a general ENE. direction from the neighbourhood of the monument.      |
| 6              | Cross a stream and continue NE. across a ridge.  |
| $7\frac{1}{4}$ | <b>Yokary Kyzyljaly</b> , alt. 840 ft., population mainly Greek; raisin culture. South of the village rises the limestone cliff of <b>Akkaya</b> .<br>Track crosses a stream which joins that passed at mile 6, $\frac{1}{2}$ mile to N., and descends the valley NNE. |
| $8\frac{1}{2}$ | <b>Ashaghy Kyzyljaly</b> on the edge of the plain. Track turns ENE. along the foot of the hills.   |

miles

- 9½ **Armudly** village.  
 10½ Join the road from Smyrna to Kassaba (see  
 Route 137, mile 25).  
 14½ **Parsa**, alt. 640 ft.

## ROUTE 142

## PARSA—BAYNDYR, 18 miles

This is a mountain track with fairly steep gradients in places. Supplies in small quantities should be obtainable, and there is probably enough water either on or near the track. Timber and scrub are plentiful.

- 0 **Parsa**, alt. 640 ft. Track runs E. along the foot of the hills.  
 ¾ **Makhalas** village.  
 1¼ **Sarlar** village. Direction now SE.; moderately steep ascent; trees in the valleys; oak scrub on the heights.  
 2½ Ascent now very gradual.  
 3¼ Spring on l. Track after some distance runs above a steep deep valley. Some firs and large chestnuts among the oak scrub here.  
 5 **Sarlar Yaila** to l. on the E. side of the valley, which now opens into a broader upland valley, rising very gently towards the S. and forming the watershed between the Hermos and Kayster valleys. It is enclosed by ridges between 1,000 and 1,300 ft. high. Chestnuts, oaks, and poplars among fields in the valley plain.  
 6 **Övajyk Kahve**, alt. 2,415 ft.; some Yürük huts.  
 7¼ Cross a ridge in an easterly direction, alt. 2,925 ft. Track now descends gradually along the slope of a deep valley running SSW. Terraces on which are cultivated fields and many small villages follow the

miles

- valley-sides. Continuous olive cultivation on both slopes begins at a height of about 1,600 ft. above sea-level.
- 12½      **Kyzyl Kilisse** village, alt. 1,465 ft. Steeper descent into the valley plain, which now opens out.
- 14½      **Ilija**, hot spring and baths at the point where the valley unites with another lying more to the W. Track winds round a spur on to the plain.
- 18      **Bayndyr**, alt. 350 ft.

## ROUTE 143

SEVDI KÖI—TORBALY, 17½ miles

There was until recently no chaussée from Sevdı Köi to Torbaly. The route here detailed joins a regular caravan-route from Smyrna on the edge of the low plateau at mile 2, and thence runs generally SE. over the partially cultivated high ground. It appears to have been metalled during the war and to be fit for wheeled traffic.

There is a fair amount of scrub along most of the route. Here and there on the plateau a few pines are to be seen, and in the plain towards Torbaly there are valonias. Water is fairly plentiful. There is a spring at mile 6 and another at mile 12.

- 0      **Sevdı Köi**, alt. 500 ft. Track runs E. across the railway S. of Kazamir station.
- 1½      Cross the **Melis Chai** and ascend on to a low plateau.
- 2      Join the caravan-road from Smyrna and follow it SE. across the plateau; maquis vegetation and a few pines; sporadic cereal cultivation.
- 5½      Cross the head of a stream valley running SW. to the **Takhtaly Chai**. Track bends S.
- 5¾      Barracks. Direction now E. by S.
- 6      **Kyzlyk Bunar** spring; the overflow forms a stream

miles

which joins that just crossed about 2 miles WSW. Road enters the broad valley of the **Takhtaly Chai**.

7 Cross the **Takhtaly Chai** river by an old stone bridge. Direction changes to SE.

10½ Cross the **Mersini Dere**.

12 **Ashaghy Trianta** khan and kahves on r ; spring on l., whose overflow forms a strong stream flowing S.

**Trianta** railway station lies 1½ mile to S. beside an isolated hill in the plain.

Track descends from the plateau to the plain, about 300 ft. lower, and continues SE. through scrub across several valleys.

14½ **Gurchuburnu** village at the foot of a spur ; cereal cultivation and some valonias.

15½ Direction changes to S.

17½ **Torbaly**, alt. 150 ft., large scattered village in the plain ; mixed population of Turks, Circassians, Gipsies, Greeks, and negroes ; one half-mile to W. is the junction for the branch line to **Ödemish**.

## ROUTE 144

### TORBALY—BAYNDYR, 17½ miles

This road is unmetalled but is in regular use and fit for wheels in dry weather. The soil is a brown sandy clay. Most of the villages lie along the foot of the low hills on the l. of the track, and cereals are the main crops until within a few miles of Bayndyr. Along this stage there are few trees. Then olive cultivation begins and extends to Bayndyr. Water is probably scarce in summer.

0 **Torbaly**, alt. 150 ft. Track runs E. across the plain through valonias and vine cultivation.

1½ Cross the **Fitrek Chai**. Track approaches the hills on the l.



miles

- |                  |   |
|------------------|---|
| 3 $\frac{1}{2}$  | <b>Gurgur</b> railway station to r. After a short distance the track crosses the railway ; <b>Arslanly</b> village in the plain to r. |
| 5 $\frac{3}{4}$  | Low flat hill on r., possibly a tumulus.  |
| 6 $\frac{3}{4}$  | Cross an outlier on which is <b>Hauslar</b> village.  |
| 11 $\frac{1}{2}$ | Recross the railway ; <b>Muhajir</b> village in the plain to NE.  |
| 12               | Railway station near <b>Takhtajy Kõi</b> to r.<br>Track crosses the <b>Ulady Chai</b> (probably dry in summer).                       |
| 13 $\frac{3}{4}$ | Cross a projecting spur. <b>Nifi</b> village to l. ; olive cultivation in the plain and along the slopes.                             |
| 17 $\frac{1}{2}$ | <b>Bayndyr</b> , alt. 350 ft.   |

## ROUTE 145

KASSABA—ÖDEMISH, 30 miles

This route is a horse-track but apparently nowhere difficult. There is a fair amount of cultivation along the route and plenty of scrub and timber.

- |                  |   |
|------------------|---|
| 0                | <b>Kassaba</b> , alt. 235 ft. Track runs SE. across the plain ; vine cultivation.   |
| 11 $\frac{1}{2}$ | Reach the bottom of the foothills, which here form a terrace about 100 ft. high. Farther S. rises another step and behind it to SE. a third, still higher, broken into numerous rounded summits. Behind the third terrace rises the ridge of <b>Tmolos</b> furrowed by deep valleys.<br>Track now crosses and ascends a brook (dry in July). The hills at first are about 160 ft. high. They soon become higher, and are broken by ravines into many steep peaks and crags. |
| 3                | Cross a ridge and descend into the valley on the E. ; <b>Siamet</b> village to E. on the far slope.   |
| 4                | Cross the stream in the valley and ascend, still in   |

miles

a SE. direction, to the third terrace. The chief vegetation here is dry scrub; higher up are corn-fields and firs.

- 7 Cross a col, alt. 1,750 ft. From here the hills are seen rising still higher to NE., with steep rugged walls falling SE. to a deeply furrowed valley system.

Track now lies over undulating plateau with scrub and cultivation.

- 9 Spring on l. Aivajyk village 2-3 miles E. in the Mermere valley. A report of 1901 states that an antimony mine had been worked there till shortly before that date.

Farther S. the track leaves the plateau and ascends a ridge through oak and juniper scrub.

- 10½ Edge of the **Mermere Deresi**, a valley deeply cut in the mountain-wall. Track runs at first along the slope of the ravine through a fine forest of evergreen oaks and chestnuts and farther on through leafy scrub. Then the bottom of the valley is reached; abundant water here; maize-fields and walnut-trees. Track ascends the valley.

- 14½ Highest point of a broad valley-floor, alt. 2,260 ft., which forms an almost imperceptible watershed between the streams flowing N. to the Hermos and those running S. to the Kayster. Vineyards and fine foliage trees in the valley; the hills uniform and bare.

**Kushlar** village on the hill to l. **Sala** village to r.

Two valleys diverge from the watershed, that on the r. SW., that on the l. S. Track follows the l. side of the l.-hand valley.

- 15½ **Kara Kõi** on the fertile slopes, alt. 2,325 ft., headquarters of a nahie; corn, maize, and millet cultivated; fruit-trees, chestnuts, and poplars.

Track ascends to l. up the ridge forming the eastern valley-wall.

- 18½ Summit, alt. 3,130 ft.; chestnut and terebinth

miles

trees, firs, and oaks alternate with scrub. Descend into the **Hammamgyr Deresi**, a broad valley from the N., up which Karacham, a Yürük village, is said to lie. The stream in the valley has cut a bed about 70–100 ft. deep; maize cultivation here.

19½      Ascend the l. side of the valley, which becomes narrow and winds SW. to join the Kara Kõi valley. The track runs first through oak scrub and then up on to a bare summit, from which a fine view opens out of the plain of Ödemish.

24½      **Kösseler** village. Cross the last ridge, alt. 1,945 ft., and descend ESE. towards the plain. Olive cultivation begins at about 1,500 ft.

26      **Karadoghan** village, alt. 625 ft.; ancient pillars near here. Cross the **Serekli Chai** and continue across the plain; fine olive-trees and cotton and maize cultivation; several villages on the slopes.

28½      **Yenije Kõi.**

30      **Ödemish**, alt. 400 ft.

## [ROUTE 146

### BAYNDYR—ÖDEMISH, 21 miles

The road between Bayndyr and Ödemish is unmetalled but fit for carts in dry weather. It appears to cross the railway several times, but there is no evidence for the actual points of crossing, the details given in the itinerary being taken from an old account.

Supplies are generally plentiful. Timber appears to be scanty at first, but plane-trees at short intervals along the road give shade in summer. Near Ödemish timber is fairly plentiful. There is no evidence as to water-supply.

The distances given below must be regarded as only approximate.

miles	
0	<b>Bayndyr</b> , alt. 350 ft. Track runs in a general SE. direction, at first through olive groves.
2	Watercourse (? the Ergenli Chai), dry in September. Track runs for a short stage over uncultivated ground, with rich plain to r.
4	A road to Tire branches to r. A short distance farther the village of <b>Burgas</b> is seen on the hill to l. The country here is rich and cultivated.
5	Cross a watercourse (dry in September) by a bridge of 3 arches; valley in the hills to l. and the large village of <b>Balkar</b> ; 2 small rocky hills in the plain to r.
8	Tire lies nearly due S., almost hidden by trees and low hills.
11½	The Küchük Menderez is now little more than 1 mile to r.; tall trees along the banks and cultivation, mainly maize, between the river and the road. The ground to l. is uncultivated, and the hills here are very close at hand.
14½	The river is now a considerable distance to r., and S. of it is a break in the mountain chain.
15	Cross 2 small streams from the l. The hills here recede to N. Track bends NE. and runs through narrow lanes between high hedges, with small wooded enclosures on either side.
21	<b>Ödemish</b> , alt. 400 ft.

## ROUTE 147

AYASOLUK—AİDIN, 31 miles

For about 5 miles this route coincides with the first part of that detailed in Route 132. A little beyond **Azizie** station (4½ miles) the present route bends SE. along the slope on the E. side of the railway to a spring and then turns ENE. down the **Derbend Chai** valley, crossing the railway about 4 miles

from Azizie. Here the direction changes to ESE. to **Balachyk** station ( $10\frac{1}{2}$  miles), where the plain is entered. The mountain-slopes for several miles before this point are covered with olives, pines, and maquis. Along the plain there seems to be no direct track, but there are many paths linking up the various villages. Supplies are plentiful along this stage, and the hills on the l. are well wooded.

The total distance is about 31 miles.

## ROUTE 148

TIRE—SOKIA,  $37\frac{1}{2}$  miles

This route is unmetalled as far as Balachyk station (mile 26), but probably fit for carts in dry weather, at least as far as Büyük Mahalle (mile  $15\frac{1}{4}$ ). From Balachyk station the road is a chaussée. The ground in the neighbourhood of Kemer (mile  $33\frac{1}{2}$ ) is marshy.

In the valley plain followed till mile  $15\frac{1}{4}$  there is a good deal of vine and fig cultivation, and some cereals are also grown. Along the path over the mountain there appears to be little cultivation but a considerable amount of pine forest and scrub. On the southern slopes vines and figs are again seen, and along the chaussée supplies of cereals and fruit are plentiful.

Most of the streams along the first 15 miles dry up in summer. There is, however, a spring at mile  $8\frac{3}{4}$ , and another about  $1\frac{1}{4}$  mile NE. of it forms a perennial stream flowing to join the Küchük Menderez. A little beyond the summit there is another spring (mile  $17\frac{1}{2}$ ), and the stream whose valley is followed for the next few miles also appears to be perennial.

miles

0      **Tire**, alt. 445 ft. Track runs W. along the hill-slope.

$1\frac{1}{4}$       **Beilerbaghche**, arsenopyrite mine to l.

Track continues W. through a level valley plain between the mountain to l. and a group of outliers to

miles

- r. called **Göl Dagħ**, alt. about 1,000 ft.. The head of the valley is closed by a low hill, on the W. side of which is a marsh draining W. ; vine cultivation.
- 5 Round reed-enclosed lake to r. called **Kara Göl**, alt. 295 ft.
- 7 Cross the stream (dry in September) which drains the **Kara Göl**. The track runs for some distance along the foot of the **Göl Dagħ**.
- 8 $\frac{3}{4}$  Spring. To r. a valley watered by a stream from a strong spring runs up NE. On the E. side of it are the emery mines of **Alajaly**. About 3 $\frac{1}{2}$  miles W. on the S. slope of the hills are several other emery mines, at **Hassanchaushlar**.  
Track now bends SW. across the valley.
- 10 Recross the stream from the **Kara Göl**.
- 11 **Büyük Kadife** on a small stream at the mountain-foot ; pine-covered slopes to S.  
Track follows the edge of the plain WSW.
- 13 $\frac{1}{4}$  **Yeni Mahalle**.
- 15 $\frac{1}{4}$  **Büyük Mahalle** ; much cultivation of dari, cotton, and sesame.  
Track now runs S. up the broad valley behind the village ; pines and maquis.
- 17 Summit, alt. 1,575 ft.
- 17 $\frac{1}{2}$  Spring ; pine forest.  
Track descends a valley in a general S. direction.
- 20 $\frac{1}{2}$  Track leaves the valley and runs SW. across maquis-covered plateau.
- 21 $\frac{1}{4}$  Fig plantation.
- 23 $\frac{1}{4}$  **Balachyk** village ; some emery mines. Direction now SSE. through vine and fig cultivation.
- 26 **Balachyk** station. The railway is now crossed, and the route follows a chaussée first SSE. across the plain and then S. and SW. round the foot of **Gümüş Dagħ**.
- 32 $\frac{1}{4}$  Cross the railway.

miles	
33½	<b>Kemer</b> village.
34¼	Road recrosses the railway.
36½	A track comes in on the r. over the Gümüş Dagħ (see Route 132, mile 18¼).
37½	<b>Sokia</b> , alt. about 160 ft.

## ROUTE 149

AIDIN—TIRE, 24½ miles

This is simply a track, frequented only by muleteers or woodcutters. It is not generally used as a means of communication between the Maeander and Kayster valleys.

Small quantities of supplies should be procurable.

- 0      **Aidin.** The road is merely a track and runs W. over sandy plain cultivated with vines, olives, and figs. Two stream-beds are crossed, and the track bends round to NW., approaching the hills.
- Enter the narrow valley of the **Ekiz Dere**, which the track ascends in a general N. by E. direction. The stream is a strong one and drives a good many mills.
- 7      The valley broadens ; olive cultivation.
- 9      **Ekiz Dere** village. Cross a brook from the NE. ; firs in the stream valley.
- 11½      **Haji Ibrahim Deirmen**, alt. 630 ft. ; olive cultivation. Track now ascends high on the W. side of the valley through scrub ; some vine cultivation on the higher slopes ; several villages visible on the E. side of the valley, beyond which lies a gently sloping plateau about 3,000 ft. high. Farther E. rise higher terraces and a ridge about 5,000 ft. high running NE.
- 16      **Chomakly** village. Ascent through vine cultivation on to a ridge overlooking the valley of the Geremboz Chai W. of the Ekiz Dere ; several villages also in this valley ; much vine cultivation.

miles

- 20 **Sarysu Kahve**, ruined rest-house near the upper end of the Geremboz Chai valley. Track still ascends for a short distance.
- 21 Watershed formed by a flat col in the **Güme Dagħ**, alt. 3,575 ft. Magnificent view to N. over the Kayster valley. On that side the mountain falls abruptly to the plain. Track descends in zigzags through chestnut-trees and, near the foot, among olives.
- 24½ **Tire**, alt. 445 ft.

## ROUTE 150

AIDIN—NAZLY, 27½ miles

This road is called a *chaussée*, but in 1901 the first 9 or 10 miles were no better than a track. It runs between reed hedges and is very dusty in summer. There are vineyards and olive and fig plantations near the villages, but apparently little cereal cultivation. The ground on the S. near the river, except where it is covered by marshes, produces cotton and maize. On the N. the foothills are little cultivated, and largely overgrown with valonias and scrub, while the slopes of the mountain behind are covered with firs and pines.

The streams mentioned in the itinerary are dry in summer, but drinking-water is obtainable from wells or at the numerous kahves along the road.

- 0 **Aidin**. Track runs E., crossing the railway after ½ mile and recrossing after another ½ mile. It then continues through orchards between the railway and the foot of the hills to l. ; fig and almond cultivation S. of the railway.
- 3½ Cross the **Imam Köi Chai**. The village of Imam Köi lies on the l. bank of the stream at the foot of the hills about ½ mile to N.
- 5 **Serseköi** ½ mile to r. beyond the railway. A track here branches to r. across 2 streams and the railway



miles

- line to Omurlu, a little over 1 mile distant on the S. side of the railway.
- 5 $\frac{1}{4}$  Stream.
- 6 Stream. The hills here recede somewhat to N.
- 6 $\frac{1}{4}$  **Omurlu**  $\frac{1}{4}$  mile to r.
- 6 $\frac{1}{2}$  Cross the **Cherkushlu Chai**.
- 8 $\frac{1}{4}$  The hills again approach the track.
- 9 A track comes in on the l. from **Ödemish** (see Route 152, mile 31).
- 9 $\frac{1}{2}$  Stream from a valley to l.; **Kuyujular** village 1 $\frac{1}{2}$  mile upstream. **Beyköi**  $\frac{1}{2}$  mile SE. beyond the railway among fig plantations.
- 11 Stream.
- 11 $\frac{1}{2}$  **Kiosk** village; fig plantations.
- 13 $\frac{1}{2}$  Stream; **Kyrk Kahve** on the l. bank. **Yavly** village on the hill 1 mile to N. Track crosses the railway; saw-mill to r.
- 15 **Chifte Kahve**. **Salavakly** village 1 mile to N. on the slope of the hills, which again recede at this point
- 16 Stream. **Karait** village  $\frac{1}{2}$  mile to N. beyond the railway, and  $\frac{1}{2}$  mile farther N. **Eski Hissar**.
- 17 $\frac{1}{2}$  **Sultan Hissar** village  $\frac{1}{2}$  mile to N. beyond the railway.
- 18 $\frac{1}{2}$  Cross the **Balgach Chai**.
- 19 Track crosses to N. side of railway.
- 20 $\frac{1}{2}$  A track branches SE. to **Akche** village,  $\frac{1}{2}$  mile. Fig plantations S. of the railway. Three cemeteries are passed and two streams crossed in a little over 2 miles.
- 22 $\frac{1}{2}$  The hills here recede to the N.
- 23 $\frac{1}{2}$  Stream flowing in 2 branches; **Issibeyli** 1 $\frac{1}{4}$  mile upstream. The hills again approach the track.
- 25 $\frac{1}{2}$  Cemetery. **Ereniz** village 1 mile to l. in a stream valley. Track crosses several branches of the stream which comes down the valley. **Dalge** village among fig plantations  $\frac{1}{2}$  mile to r. S. of the railway.
- 27 $\frac{1}{2}$  **Nazly**, alt. about 250 ft.

## ROUTE 151

## ÖDEMISH—SALYKHLI, 23 miles

This is a horse-track. The gradients are steep in places, and the going may be difficult along the Göljök Lake owing to marshes. Supplies in small quantities should be obtainable. There is plenty of water even in summer from springs and streams, and there seems to be a fair amount of timber, at any rate in the valleys.

miles

0

**Ödemish**, alt. 400 ft. Track runs NNE. across the plain; sandy soil with vine cultivation and, farther on, olive groves.

1

Terraced spur to r., the site of an ancient settlement. Ascend a stream-bed (dry in July).

3½

**Geneve** village among olive groves at the foot of the hills.

Track ascends in steep zigzags up the uniform slope.

6

Spring. About 1 mile distant is a place where some trial-shafts have been sunk to test a reef containing iron, arsenic, and sulphur. The vein is also said to be gold-bearing, but does not appear to be extensive. At a village called Bülüler in the neighbourhood there is reported to be an ancient copper mine, which is said to have been worked also in recent times.

Track continues NE. Many springs on the slope, which is completely covered with oak scrub. The ravines are well watered and filled with planes.

7½

Summit, **Mezaria** col, alt. 3,495 ft., in a small wood of tall oaks. The mountain rises with bare slopes 600–700 ft. above the saddle. In front is a valley ½–¾ mile broad with a lake, **Göljök**, stretching N., surrounded by a fine growth of poplars, chestnuts, walnuts, and fruit-trees, and bordered by maize-fields and meadows, which give pasture to herds of cattle. The lake is 1½ mile long, with a breadth, at the

miles

widest point, of about  $\frac{1}{4}$  mile. It lies only 120 ft. below the summit. Its narrowest point is about the middle.

From the summit there is a clearly marked step down towards the lake. Track runs along the W. side. In many places the shores are marshy, and there are numerous springs on the E. side. In the valley plain are the summer residences of the inhabitants of Birge (see Route 154, introduction).

Three to four miles E. rise the peaks of Boz Dagħ (highest summit 6,985 ft.). A path runs from Bozdagh Kōi, a village lying among fruit-trees and chestnuts at a height of 3,710 ft. to N. of the mountain, up to the snow-level in order to bring down snow for refrigerating purposes.

9 North end of the lake. Track crosses to r. bank of the stream which issues from the lake (very little water in the end of July). It then continues NNE. down the valley. The ground slopes gently towards the middle.

11 **Boaz**, a few houses. The plain now comes to an end, and the stream runs NNW. with a more rapid fall down a narrow valley. There are no details for the track during the next few miles. It appears to continue NNE. over a ridge into a stream valley, which it follows down the W. side. The country appears to be bare except for a few oaks, pines, and cypresses.

18 **Allahdeyan** village, alt. 1,850 ft. There is said to be sulphur here. Track ascends the side of the valley N. and then descends the northern slope NW.

19 $\frac{1}{2}$  Reach the foot of the hills and continue first NE. and then ENE. along the foot of slopes covered with a scanty growth of evergreen oak scrub.

22 $\frac{1}{4}$  Salykhly railway station, alt. 360 ft. Track continues NE. along a fine avenue of plane-trees.

23 **Salykhly**, alt. 260 ft.

## ROUTE 152

## ÖDEMISH—KIOSK, 33½ miles

As far as Bademnia (mile 10½) this route is easy. Across the mountains it is a difficult pack-route, with steep gradients in many places. The surface is bad for several miles down the Mendegümme valley (see under mile 19½).

Supplies other than fruit are to be obtained only in very limited quantities. Timber is plentiful, but water is probably scarce in summer.

miles

0

**Ödemish**, alt. 400 ft. There are no details available for the first 10½ miles. The track crosses the valley SSE. and rounds a spur to Bademnia.

An alternative track runs to Adigede (see mile 13 below) and then up a valley to join the track via Bademnia at about mile 14½.

10½

**Bademnia**. Track ascends the narrow valley SW. through thick orchards and then begins to mount the hill-slope in steep zigzags. Vineyards alternating with thick scrub accompany the path till an altitude of about 2,500 ft. is reached. Direction bends round to W.

13

Cross the head of a valley which forms one of a system falling steeply N. to the large village of Adigede at the foot of the hills.

13½

Spring, alt. 2,830 ft.

14½

A track comes in from Ödemish via Adigede.

Direction changes to SW., past the heads of several small valleys running to Güre village 1 mile to W.

16

Cross the watershed, alt. 3,165 ft.; oaks and chestnuts growing singly or here and there in clumps. The col is 1,000–1,300 ft. below the top-level of the mountain. In front lies the long valley of **Mendegümme** running S. with an undulating plateau

D d 2

miles

- 3,600–4,000 ft. high on the E. Track descends the E side of the valley. Some distance down chestnuts, walnuts, fruit-trees, and oaks form a thick forest ; here also are maize-fields and blackberry hedges.
- 19½      **Hamмам Kōi** to r. beyond the stream at the mouth of a large side-valley from WNW. ; other villages high up on the slopes to l. The valley now narrows, and the track continues high up along the E. slope ; forest on the W. side. The path becomes very bad, continually ascending and descending over side-gullies. Olive-trees begin at an altitude of about 1,600 ft.
- 23½      **Egrikavak**, large village on the western slope.
- 25½      Reach the narrow valley-floor and cross a bridge to a mill on the r. bank. The stream is called **Kochak Chai**, and contains water in the end of August.
- 27      Track now runs down the r. bank.  
**Kochak** village, alt. 495 ft.
- 30      The valley now broadens. Most of the water in the stream is used to irrigate maize-fields ; olives and valonias are frequent, with evergreen oak scrub and scattered pines. The hills are low.
- 30      **Kuyujular** village at the mouth of the valley.
- 31      Track runs SSW. across the plain.
- 31      Join the chaussée from Aïdin to Nazly (see Route 150, mile 9).
- 33½      **Kiosk**.

## ROUTE 153

NAZLY—BADEMNIYA, 28 miles

This is a pack-route with rather steep gradients in places on the passage over the mountain, particularly on the N. side. The country traversed does not appear to have much cereal cultivation. There is abundance of fruit (vines, figs, olives,

&c.), and also plenty of timber. Water is generally plentiful, especially in the plain of Baliamboli.

There are cinnabar deposits at mile 19½ and an antimony mine near Emirli (mile 23).

miles

- |     |   |
|-----|---|
| 0   | <b>Nazly</b> , alt. 250 ft. Cross the railway to Nazly Bazar and turn NW. up the hill-slopes.   |
| 4½  | <b>Hazkõi</b> , alt. 1,460 ft., situated among vine and olive cultivation. About ¾ mile NE. is a lignite mine. Track ascends N. on a broad ridge between two valleys; fig and vine cultivation along the route.   |
| 7   | <b>Kavajyk</b> , small village to l. on a saddle of the ridge. Fruit cultivation now ceases, giving place to deciduous oak scrub. Ascent becomes steeper.   |
| 8½  | Spring; tall oaks and some chestnuts here and there among bracken. Track bends NNW. across an easy valley.  |
| 11  | Cross a col, alt. 4,670 ft., about 300 ft. below the level of the top of the ridge. The N. slope is steep and uniform; view opens out of the Boz Dagħ and the plain of Kelles and Ödemish. Track descends NW., at first slanting down the slope, and then winding in a more northerly direction through or along a water-channel. The upper slopes are quite bare. Lower down, at an alt. of about 4,300 ft., rye-fields and scattered oaks begin, and still lower, at about 4,000 ft., a magnificent chestnut forest, which stretches right to the foot of the mountain. |
| 15  | <b>Chomaklar</b> village, alt. about 1,300 ft.; chestnuts and olives. From here a hilly terrace stretches NW., sloping gently to the valley and plain. This is the small but fertile and thickly populated district of Baliamboli. It is covered thickly with fruit-trees, mainly walnuts but also figs and vines. There is abundant water.   |
| 18½ | <b>Bazaryeri</b> , alt. 810 ft., village of a few fine houses.  |

miles

The head-quarters of the nahie, **Beyköi**, lies about  $1\frac{1}{2}$  mile to S. at the foot of the hills.

From Bazaryeri a track runs N. up the fairly broad valley of the Küçük Menderez to **Kelles**, about 10 miles.

Track runs W. over low hills through orchards of olives, figs, mulberries, and vines.

19 $\frac{1}{2}$       **Cinnabar** mine in a valley to l. Some of the veins at least are not sufficiently important to be worked at a profit, but there are indications of the presence of richer deposits. There are numerous ancient galleries.

20      **Haly Köi**, small village. Track continues W., at first through olive cultivation. Farther on the hill is bare.

21      Reach the plain of the Küçük Menderez and continue W., skirting the hills.

22 $\frac{1}{2}$       Track bends SW. into a valley.

23      **Emirli**, alt. 950 ft.; fine view over the tree-clad plain to the low hills on the N. and the lofty Boz Dag and Kangal Dag rising behind them. South of the village is an antimony mine worked in rather primitive fashion.

Track bends NW. to the plain and after some distance turns SW.

25 $\frac{1}{2}$       Track crosses a stream-bed (dry in August) and ascends gently, at first through fig cultivation and then through thick olive groves.

28      **Bademnia**, alt. 935 ft., market town among trees at the mouth of a valley.

## ROUTE 154

## ÖDEMISH—KELLES, 17½ miles

The details given below are taken from an old account. According to the latest maps the road is metalled. Supplies should be fairly plentiful, and the country is well wooded. Water is scarce in summer.

An alternative route runs ENE. to Birge (or Berki; 2½ hrs.), a village delightfully situated on a torrent spanned by a picturesque bridge and noted for its fine air, good water, and sylvan scenery. Leaving Birge this route follows a path over high ground to the upper waters of the Küchük Menderez, the valley of which it descends to Kelles (7 hrs.).

The distances given in the itinerary must be regarded as only approximate.

miles

- |    |  |
|----|--|
| 0  | <b>Ödemish</b> , alt. 400 ft. Road runs across the plain, apparently ESE.  |
| 2¾ | <b>Besdeimi</b> village. A short distance farther there is an oblong-shaped hill in the plain to r.  |
| 3½ | Village and trees to l.  |
| 4½ | Cemetery. Gradual descent to a ridge running down from the mountain to l.  |
| 5½ | Road passes through a narrow cut in the rock about 100 ft. long. Gentle descent.   |
| 6¾ | Cross another ridge; woods in the plain to r.  |
| 8  | <b>Kaimaklői</b> (? Kaimakchi) <b>Kahve</b> ; bad water. <b>Kaimakchi</b> village lies to l. under the mountain. Course now almost due E. considerably above the level of the plain, towards which the ground slopes almost imperceptibly. |
| 8¾ | Road passes through a second cut about 100 ft. long in a cross-ridge. The country now is open and separated from the plain to r. by another ridge in front. Road bends northwards, apparently round the N. end of this ridge.              |



miles

- 10 $\frac{1}{4}$       Cross a stream-bed from the l. (dry in September). Two others, the second very deep and wide, are crossed within the next 1 $\frac{1}{2}$  mile. All these streams are tributaries of the Küchük Menderez.
- 13 $\frac{1}{2}$       Direction here E. ; rich cultivated plain in front.
- 14      Cross a wide watercourse running down to the r. ; tamarisk scrub along the banks.
- 15      Road turns nearly due N.
- 17 $\frac{1}{2}$       **Kelles** (the ancient Koloë), alt. 940 ft., small village with a bazar. The place is the head-quarters of a nahie.

## ROUTE 155

KELLES—DEREKÖI, 19 $\frac{1}{2}$  miles

This route is fit only for pack-traffic. Supplies in moderate quantities should be obtainable throughout. Timber and scrub are plentiful, and there is also abundance of water even in summer.

- 0      **Kelles**, alt. 940 ft. Track runs NE. at first through gardens, then through cultivated fields and farther on among olives.
- 2      **Yagaz**, village of ruinous houses at the mouth of a valley ; many trees and shrubs. The place is well watered by a stream from the mountain on the N.  
Track ascends the western side of the valley ; rich vegetation in the valley-bottom, deciduous oak scrub along the slopes.
- 3      Cross to the E. side of the valley.
- 5 $\frac{1}{2}$       Recross to the western side and ascend through thick oak forest on to a terrace with cereal cultivation. This terrace is broken by the upper branches of the Yagaz valley and then merges northwards into a valley in which are irrigated maize-fields.

miles

8

Cross the watershed, alt. 3,320 ft. ; **Ovajyk** mosque and scattered village of about 40 houses. A stream runs N., some of the water of which is artificially diverted to irrigate the maize-fields on the S. side of the watershed.

To W. rises the high bare ridge of Kangal Dagħ. The valley a short distance to N. becomes very deep. Cultivated terraces accompany it on either side, and the stream is fed by many springs. Fine planes and chestnuts grow along the banks and deciduous oaks on the slopes.

Track winds along the eastern slope at first up and down across side-gullies without descending perceptibly from the level of the watershed. Then it descends into a side-valley which, together with the main valley, forms a broad depression in which the stream-beds are cut to a depth of about 300 ft. Here also are cultivated terraces.

16

**Kessere**, alt. 1,590 ft., Yürük village on a terrace.

At Kessere a track branches to l., joining Route 103 a little E. of Yeniköi (see Route 103, mile 17½).

The present route continues N. down the valley.

19½

**Dereköi**, alt. about 400 ft.

## ROUTE 156

ALASHEHIR—KELLES, 23½ miles

This is a pack-route. The hill country traversed is inhabited mainly by Yürüks, but there is some cultivation practically all along the track. Timber and scrub are plentiful except for the last few miles across the plain of Kelles. Water is probably scarce in summer.

0

**Alashehir**, alt. about 650 ft. Route runs W. through the gardens and vine, olive, and fig cultivation which cover the alluvial ground.

miles

1½

Turn SW. up the large valley of the **Zeitunly Dere**.

Track runs for some distance through fine orchards in the valley-floor.

2½

Track turns to r. and ascends along the western slope.

4½

**Takhtaly** village, alt. 1,580 ft. ; trees and tobacco-fields far down in the valley-bottom ; vine cultivation on terraces beside the village. The place is deserted in summer.

Track continues up the slope. Vine terraces and scattered trees, especially the Judas tree and terebinth, here and there break the monotony of deciduous oak scrub. A summit is passed and a small crest reached between the valley hitherto followed and another parallel to it on the W. This second valley is deep, and beyond it rises a conical peak. Track continues to ascend along the ridge between the two valleys ; some rye-fields here among pines and deciduous oaks, which are apparently the remains of a forest now destroyed.

8½

**Takhtajy** encampment here in 1901 among pines. The place is called **Daryderesi**, alt. 4,350 ft.

Track continues up the western slope of **Mesargidi**, the mountain to l., through bracken and pines. Rye-fields (harvested in the beginning of August) cease at an altitude of about 4,900 ft.

9

Spring on l.

9½

Cross the col, alt. 5,000 ft., between **Mesargidi** and another summit to r. Pines cover the slopes on either side for about 300 ft., and above that the mountains rise for another 300–400 ft. From here a valley runs SE. to a large valley running E. and W. The latter is watered by two streams, one running E., the other W. The eastern, the **Chaus Dagh Su**, belongs to the **Hermos** system and rises in a round green plain separated from the western part of the

miles

valley by a low rise (about 1,600 ft. above sea-level). The eastern stream has a gentle fall ; that on the W. cuts a deep narrow valley and belongs to the Kayster system.

In contrast to the broken character of the northern slopes, those which fall S. to the valley just described are easy and uniform. There are patches of cultivation quite high up, and many Yürük encampments are to be seen.

Track curves W. round the ridge on the r.

- 12 Col, alt. 4,760 ft. Descent begins, running obliquely WSW. down the slopes, which fall in small irregular terraces. At first there is rye and millet cultivation, with pines growing among the fields. Then lower down, at a height of about 4,000 ft., maize-fields begin, with deciduous trees, oaks, poplars, and fruit-trees. Lower still, at about 3,300 ft., valonia forest begins.

- 16½ **Elbi**, alt. 1,740 ft., prosperous village in a side-valley running S. to that described under mile 9½ ; some ancient ruins in the neighbourhood.

Descent continues through olives and valonias.

- 18 Reach the valley and turn W.

A track from Dagh Derbent (see Route 159, mile 14½) comes in on the l.

- 18½ Farm-house, alt. 985 ft., where the valley opens into the plain of Kelles. The plain is roughly triangular in shape, bounded on the N. by the high ridge of Chaush Dagh and the southern spurs of Kangal Dagh and on the S. by low hills. Through the eastern part the track runs W. among valonias and cereal cultivation. Farther on the fields are treeless. Beans and hemp are extensively grown. Nomad encampments are to be seen here and there.

- 22¼ **Shamshiler** village at the foot of the hills on the W. side of the plain. Track bends NW.

miles

23½

**Kelles**, alt. 940 ft. On the W. side of the village runs the Küchük Menderez, which flows S. through the plain and down a valley at its southern corner into the plain of Baliamboli (see Route 153, mile 15).

## ROUTE 157

## NAZLY—SERAİ KÖI, 36 miles

This road is stony, but fit for carts in dry weather. The valley is at first broad and well cultivated with figs, vines, olives, cotton, and cereals. Beyond Kuyujak (see mile 7) the valley gradually narrows, and considerable stretches of country, especially on the N. side, are under pasture. The narrowest point is reached about mile 24, and fig cultivation ceases a few miles farther on, giving place to cereal cultivation.

There are several good wells along the first part of the route, but information is lacking for the later stages. The streams crossed are nearly all dry in summer.

- |    |   |
|----|---|
| 0  | <b>Nazly</b> , alt. about 250 ft. Road runs E. between the railway and the foot of the hills; fig and olive cultivation on the slopes to l.; cotton and cereal fields in the valley plain to r. |
| ½  | Stream.   |
| 1¼ | Stream.   |
| 1¾ | A track branches S. across the railway to <b>Yorghanlı</b> village, ¾ mile.   |
| 2½ | <b>Arslanly</b> village ½ mile to l. Road crosses 2 branches of a stream.   |
| 3½ | Cemetery. <b>Dumanly, Chibuli, Sevdiköi, and Bereketli</b> to S. between the railway and the Maeander.<br>Direction now E. by S.  |
| 5¼ | Road crosses 3 branches of a stream in a little over ½ mile.  |
| 6  | <b>Sinekler</b> village ¾ mile to l., among valonias;   |

miles

- Hamzaly**  $\frac{3}{4}$  mile to r. beyond the railway ; fig plantations.
- 7 A track branches to l. to **Kuyujak**  $\frac{3}{4}$  mile to E. on an outlier of grey sand and gravel. The village is the head-quarters of a nahie.
- 7 $\frac{1}{2}$  Road crosses the railway, and a path branches to r. to a bridge over the river.
- 8 A track (Route 194) branches to r. to a second bridge.
- 8 $\frac{1}{2}$  Road crosses 2 branches of a stream. **Teboban** village  $1\frac{1}{2}$  mile upstream on the l. bank at the foot of the hills.
- 9 $\frac{3}{4}$  Cemetery.
- 10 $\frac{1}{4}$  In the next  $1\frac{1}{2}$  mile several stream-beds are crossed. The Dandala Su enters the Maeander from a valley in the hills to S.
- 13 $\frac{1}{4}$  A path branches NNW. across the railway to **Gereniz** village,  $1\frac{1}{2}$  mile.  
Road crosses a stream ; fig plantations.
- 13 $\frac{3}{4}$  Road touches the river at a bend ; cultivated ground on the l. bank.
- 15 A path branches N. to **Khorsunlu** village at the foot of the hills, alt. 365 ft.  
Liquorice scrub and maize-fields along the river. Fig cultivation disappears for some distance.
- 16 $\frac{1}{4}$  Stream.
- 17 $\frac{1}{4}$  Stream ; pasture-land and valonias N. of the railway. **Billara** village on the l. bank of the stream at the foot of the hills  $1\frac{3}{4}$  mile to N. **Jamalak** village on a spur  $1\frac{1}{4}$  mile to S.
- 18 $\frac{1}{4}$  Three stream-beds are crossed in  $\frac{1}{2}$  mile ; wooden bridge over the river to r.
- 19 Stream.
- 19 $\frac{1}{2}$  Pasture-land beyond the railway.  
**Gengelli** village  $1\frac{1}{2}$  mile N.
- 21 $\frac{1}{4}$  Road crosses a wide stream-bed flowing in several

miles

channels ; **Feslek** village 2 miles to N. on the r. bank. The hills to N. are covered with valonias and scrub.

22½ **Burkhanie** railway station. A track branches S. across the railway and river to Denizli (see Route 195).

22¾ **Kahve**. A path branches NNE. through fig plantations to **Ortakche**, 1½ mile (see Route 159, mile 39¼).

24 A path branches S. across the river and along the foot of the hills on the S.

Road crosses to N. side of railway. **Burkhanie** village and fig plantations on l. The drinking-water of the village is from the overflow of a warm spring near **Ortakche**. Road crosses a stream.

26¼ Stream ; **Savjily** village at its source 1¼ mile to N. among cultivation. Fig plantations now come to an end.

27 Pasture-land to r.

28 A track branches N. up the **Kyzyldere Chai** to **Kyzyldere** village, 1½ mile. There are hot springs in the valley, the higher of which are boiling hot and break out with a noise like an engine blowing off steam. The lower springs are not so hot, but even they have a temperature of not less than 100° F. There are similar springs on the S. side of the Maeander valley and in the river-bed itself.

29 Stream.

29¼ Road crosses to S. side of railway.

30 Small stream formed by the overflow of a hot spring to l. at the foot of the hills, which here approach the river.

30¼ The railway is crossed and recrossed several times in the next 2 miles.

31¼ Iron railway bridge to r. **Karatash** village ¼ mile to l. A track branches SE., crossing the river by a wooden bridge and then running through cultivation

miles

to Seraï Kõi. The better track apparently continues up the r. bank.

33½

**Yenikõi** on the l. Here the road meets the chaussée from Bulladan (see Route 160, under mile 46½). Fine view up the triangular valley of the Chürük Su (anc. Lykos), which joins the main stream about 1½ mile higher up; gently undulating alluvial hills to S. sloping up to the ridge of Buba Dagħ.

Track turns S. across the bridge over the **Maeander**. The river here is 60–70 ft. wide and flows with many windings between well-defined banks near the N. edge of the valley. The water is muddy and apparently deep.

36

**Seraï Kõi**, alt. 560 ft., thriving market town of 5,000 inhabitants; head-quarters of a kaza; railway station on the Ottoman line about ½ m. to S. The town lies not far from the S. edge of the Maeander valley. Part of it was in ruins in 1901 as the result of earthquakes. The chief products are barley and cotton, which are exported to Smyrna.

## ROUTE 158

KUYUJAK—ALASHEHIR, 39½ miles

This route appears to have been in use for a very long period. It is unmetalled and is probably unfit for wheeled traffic.

Limited supplies should be procurable. The stream valleys which are followed for most of the journey appear to carry water in summer, and there is plenty of timber and scrub.

0

**Kuyujak**. Route runs W. along the road followed between Nazly and Seraï Kõi (see Route 157, mile 7); valonias and a few olive-trees.

1

Track leaves the Nazly road and bends NW. into



miles

- the broad fertile valley of the **Kestel Chai**; many valonias.
- 2½ The valley widens to a small plain; the water of the stream is drawn off in irrigation-cuts. Direction now N.
- 4½ The valley narrows again.
- 5 **Demirjiler** village.
- 6 Kahve.
- 6¾ **Cham Köi**. Track now enters the mountain zone; easy uniform partly cultivated slopes of reddish-brown colour, broken only here and there by rocks and dotted with scattered valonias and oaks; orchards in the valley-bottom.
- 10½ Cross to r. bank of stream, alt. 1,950 ft. Track now ascends the western slope.
- 11 **Göjelideresi** village to l. Track descends again to the stream and continues up the valley sometimes on the l. and sometimes on the r. bank; evergreen and deciduous oak scrub among the oaks on the slopes; a few chestnuts farther on.
- 15 Summit, alt. 3,200 ft. A second col is crossed after a short distance. View down into the long deep stream valley of **Avra** running from SE. to NW. The head of the valley is separated by a low watershed from the **Karajylar Dere** (see Route 159, mile 20). To NE. on cultivated terraces beyond the stream lie the scattered houses of **Avra**, behind which rises a uniform ridge with a few fields and oak-trees. To N. a number of large valleys join that of **Avra** from a plateau on the W. about 2,600 ft. high. Farther N. rises an even ridge, behind which the bare serrated chain of **Tmolos** is seen stretching as far as **Boz Dag**h in the W.
- 16 Track winds down the slope to the stream. Cross the stream, alt. 2,030 ft. Track descends the valley along the r.-hand slope. The valley

miles

alternately narrows and widens, and the stream flows in a broad bed; cultivation along the banks, and huts here and there; oaks and pines on the hill-slopes.

19½ Track crosses the stream. To l. a valley belonging to the system above mentioned (mile 15) runs up towards the plateau on the W. The Avra valley is here broad and cultivated. It is now known as Sarma Deresi.

20¾ **Sarma Deresi**, scattered village. The valley opens into a plain, into which several side-valleys open from the W.

25 **Dagh Derbent**, alt 1,380 ft. For the rest of the journey see Route 159 in the reverse direction from mile 14½.

39½ **Alashehir**.

## ROUTE 159

ALASHEHIR—BURKHANIE, 40½ miles

From mile 5½ this route is fit only for pack-transport. Supplies in small quantities should be obtainable along most of the track. Water is probably scarce in summer. Timber and scrub are plentiful.

0 **Alashehir**. The road runs SE., skirting the fore-hills. These outliers are about 150 ft. high and generally flat, forming terraces sloping to the plain.

2 A dike here runs out into the plain from the hill. A little farther on a road branches to l. to Ushak (see Route 107):

2¾ Second dike, at the mouth of a valley; khan.

3¾ Third dike, with a Moslem cemetery. Beyond this point numerous villages are to be seen along the hills, which here form two terraces, the outer 150-

miles

300 ft., the inner about 500 ft. high. Behind, the mountain forms a third plateau, over 3,000 ft. above sea-level. Low rounded hills, partly fallow, partly cultivated with beans and cotton, project into the plain.

5½

**Mutaveloghlu Khan.** The chaussée to Inegöl continues ESE. along the foot of the hills (see Route 160).

Present route turns S. into the **Derbend Dere**; olive cultivation. The lower part of the Derbend Dere forms a wooded plain watered by the drainage from several streams which come down in broad beds.

8

Cross the main stream; the **Kisik Dere** (see mile 16 below) comes in on the r. bank a short distance downstream. Track ascends along the eastern slope in order to turn the ravine down which the river comes on the r. The gorge is called **Demir Kapu**, and on the far side of it rises the conical mass of **Köres Dagħ**. There is said to be a mine of some yellow mineral in the valley.

After some miles the mountain-slopes become easier. They are covered with low valonias.

14½

Track descends and crosses the stream; **Dagħ Derbent** on the l. bank, alt. 1,380 ft. A path here comes in from Kuyujak (see Route 158, miles 0-25) and another branches to r. over picturesque wooded ridges to join Route 156 at mile 18.

Present route turns ESE. up a low ridge.

16

Summit, alt. 1,550 ft. The ridge forms the watershed between the Derbend Dere and Kisik Dere. The latter stream carries the water of several tributaries from E. and S. and flows N. roughly parallel to the Derbend Dere, joining the latter some distance before it enters the plain (see mile 8 above).

16½

A track continues ESE. to Bulladan (see Route 161, miles 16½-37½). Present route turns SE. across several small valleys.

miles

- 18      **Örenjik** village in a valley among well-watered gardens.
- 20      **Karajylar**, alt. 1,860 ft. Track bends S. up the **Karajylar Dere**, which carries the main southern feeder of the **Kisik Dere**; cultivation in the valley; valonias and other varieties of oaks and some chestnuts on the slopes.
- 21½      Ice-cold spring on r.
- 23      Cross to the r. side of the valley.
- 24½      Track bends ESE., ascending steeply out of the **Karajylar Dere**.
- 25      Summit, alt. 3,285 ft. The ridge is the watershed between the **Karajylar Dere** and the **Feslik Chai**, which joins the **Macander** some distance W. of **Ortakehe**.  
Track descends slightly into the **Sarachova**, an upland valley plain about  $\frac{3}{4}$  mile wide and 2 miles long, drained by the upper waters of the **Feslik Chai**. In the middle of the valley is the prosperous-looking village of **Sarachova**. The valley plain is partly cultivated and also affords fine pasture for cattle. **Takhtajy** tents may be seen. The hills on either side rise 600–1,200 ft. above the plain and are dotted with scattered pines.
- 27½      Reach the eastern end of the plain. Track follows the stream, which now enters a deep narrow valley. Oak scrub and chestnut-trees form the chief vegetation. Farther down the valley widens somewhat, and a few houses, with some cultivation, are to be seen along the stream.
- 31½      The valley bends S. and again becomes very narrow. Going now very bad. Track crosses to the r. bank of the river and ascends steeply through valonias. There may be a more direct route along the l. bank.
- 32½      **Tekke**, small village, alt. 2,975 ft., on a ridge between deep valleys.  
Steep descent through valonias and other oaks.

miles	
33 $\frac{3}{4}$	Track reaches the river again.
34	<b>Eski Feslik</b> , alt. 1,685 ft., between steep side-valleys; olive cultivation now begins.
	Track runs S. down the narrow valley; terrace to r. about 100 ft. above the river.
35 $\frac{1}{2}$	The valley-walls gradually recede.
37 $\frac{1}{2}$	Track bends E. by S. out of the valley and along the foot of the hills; cultivated slopes to r. and olive-trees.
39 $\frac{1}{2}$	<b>Ortakche</b> village and hot spring to l.
40 $\frac{1}{2}$	<b>Burkhanie</b> village, alt. 550 ft.

## ROUTE 160

ALASHEHIR—SERAİ KÖİ, 48 $\frac{1}{2}$  miles

This road is passable for carts as far as Inegöl (mile 12 $\frac{1}{2}$ ). Beyond that point it degenerates into a track, but improves again at Bulladan, from which place to Seraî Köi it is fairly good and fit for wheels.

Supplies are probably scanty beyond mile 20, and water may be scarce in summer. Timber and scrub are generally plentiful.

0	<b>Alashehir</b> . For the first 5 $\frac{1}{2}$ miles see Route 159.
6 $\frac{1}{2}$	Cross the <b>Derbend Dere</b> . Track continues skirting the hills.
12 $\frac{1}{2}$	<b>Inegöl</b> on the edge of the plain, alt. 665 ft., small market town, the head-quarters of a nahie; maize and millet-fields and vineyards enclosed by mud walls; the elaeagnus is common. From here to Bulladan all the villages are Yürük.
	The road now is simply a track running between the foot of the hills and the Alashehir Chai, which waters the plain on the l.
20	Cross the river just above the point where the

miles

**Karynjaly Dere** comes in from the E. down a large valley. Alt. 1,010 ft. The track turns SSE. up the narrow valley of the main stream; spring on r. on the l. bank of the river. Evergreen oak scrub on the slopes.

The winding defile through which the road runs for the next 3 miles is of considerable importance as commanding the passage between the valley of the Alashehir Chai (anc. Kogamos) and that of the Maeander. The rock formation here is granite.

23 Granite gives place to sandstone. The track now runs through rolling hill country broken by easy valleys, down which come several brooks to the main stream. Fields and fir woods on the slopes. Gentle ascent.

24 **Kyrkchinar Derbend** village, alt. 1,739 ft. Track bends SSW.

31 An alternative track via Abdullah Khan comes in on the r. (see Route 161, mile 34½).

33½ **Bulladan**, alt. 2,070 ft.

For the next 6½ miles from Bulladan there are practically no details available for the main road.

34½ Road rounds a spur from the N.

35½ **Sazak** village out of sight among the hills to r.

A road to Demirji branches to l. (see Route 163).

43½ Extreme eastern point of the hills on the r.

44 **Tossunlar** village to r.

46½ A road up the Maeander valley branches to the r. (see Route 157, mile 33½).

Road crosses the **Maeander** bridge and runs along the Seraï Kōi Chai (dry in summer).

48½ **Seraï Kōi**, alt. 560 ft.

## ROUTE 161

## ALASHEHIR—BULLADAN, 37½ miles

Except for the first 5½ miles this is a pack-route which appears to present no special difficulties. After the hills are entered beyond Mutaveloghlu Khan (see Route 159, mile 5½) there are few villages on the track, but there is a fair amount of cultivation most of the way. Water is scarce in summer. There is a good deal of timber, and abundance of scrub.

miles

- |     |   |
|-----|---|
| 0   | <b>Alashehir.</b> For the first 16½ miles see Route 159.  |
| 16½ | The track to Ortakche branches SE. Present route runs ESE. down a small stream (dry in August).   |
| 17½ | The stream-bed bends N. into the <b>Kisik Dere</b> . Track crosses it and ascends ESE. up the main valley. At this point the stream-bed is dry in August, but carries water higher up. Irrigated maize-fields in the valley-bottom; valonias on the higher ground. On the S. the ground rises gently, broken by small valleys, and behind are the wooded mountain-slopes.       |
| 20½ | The <b>Karajylar Dere</b> comes in on the r. (see Route 159, mile 20).  |
| 22½ | Track turns to l. over a spur, cutting off a bend in the stream.  |
| 23½ | <b>Abdullah Khan</b> , alt. 1,795 ft.; to N. is a hill called <b>Irkajy Hissar</b> , with ancient ruins.<br>Track now runs E. ascending gently along a small sandy plain; bean cultivation; low hills to r.   |
| 26½ | Track leaves the valley and crosses a low rise, alt. 1,990 ft., which forms the watershed between the <b>Kisik Dere</b> and <b>Bostan Chai</b> . The country in front, drained by the <b>Bostan Chai</b> , is a broad undulating plateau falling to foothills on the E. and partly covered with scrub, partly cultivated.<br>Track descends into the <b>Bostan Chai</b> valley. |

miles

- 27½ Cross the stream, which here makes a bend from S. to E. Track ascends S. along the eastern slope; luxuriant vegetation in the valley.
- 28½ Recross the stream. Direction changes to SE., still ascending the valley through maize-fields and valonias.
- 30½ Summit, alt. 2,475 ft. Track runs across an undulating plateau at the foot of the hills on the r.; pines are now seen.
- 34½ Track bends S. round the end of the hills and along the edge of the valley system of Bulladan; fine view SE. into the plain of Pambuk Kalesi (Hierapolis).  
A short distance farther on the route via Inegöl is joined (see Route 160, mile 31).
- 37½ Bulladan, alt. 2,070 ft.

## ROUTE 162

INEİ—BULLADAN, 42 miles

This track lies for the most part over flat plateau. The chief difficulties are occasioned by the descents into and ascents out of the valleys which cross the route. For the first few miles the country is almost entirely bare of vegetation. Farther on pines, junipers, and scrub are met with, but the country is little cultivated. From Güllü (mile 14½) to Güneî (mile 22½) supplies should be fairly plentiful, but fail again beyond Güneî.

- 0 Ineî, alt. 2,350 ft. Track descends the valley from the village almost due S.
- ½ Cross the railway and ascend E. on to the bare uniform plateau and then turn S. Stunted evergreen oak scrub and scanty grass form the only vegetation.
- 5 Large ruin-field, the site of the ancient city of



miles

Blaundos, alt. 2,325 ft. The ruins lie on a peninsula formed by 2 ravines which meet on the S. The peninsula is joined to the plateau by a small saddle. The ravines are about 300 ft. deep with steep walls pierced by numerous caves.

At the bottom of the gully where the two ravines join is the wretched Yürük village of **Suleimanly**, alt. 1,950 ft.

Track continues S. over the plateau. Vegetation now becomes more vigorous; here and there are valonias, and farther on pine forest.

8½ **Katyrdyk**, small village, alt. 2,160 ft.

A track here branches E. over the plateau and down into the valley of the **Banaz Chai** (2 miles). The river is deep, narrow, and muddy, and is crossed by a bridge, **Itneili Köprü**, alt. 1,530 ft. This gives access to a small emery mine on the l. bank about 1½ mile downstream at a bend in the river where the valley narrows.

Track now runs W. by S.

9½ Cross the head of a valley running S., alt. 2,225 ft.; pines, junipers, and evergreen oak scrub here.

Direction changes to SW.

11½ Cross the **Aksaz Dere**, the lower course of the **Takmak Dere**; **Aksaz** village, alt. 1,760 ft., on the r. bank of the stream.

13½ Cross the **Güllü Dere**, a stream valley running ESE. to the **Aksaz Dere**.

14½ **Güllü**, alt. 2,135 ft., large scattered village built round an open space enclosing a pond used as a watering-place for cattle.

Track now becomes broader and has the appearance of being well-used. The country changes from the uniform level of the plateau hitherto crossed. Low

miles

undulations break the surface, and the ground is fertile, with cereal cultivation and valonias.

17½ Cross a small shallow valley running E.

19 Extensive vineyards begin. Track ascends a gentle rise covered with cultivated fields.

21½ Summit, alt. 2,820 ft. ; wide view over the plateau and the mountains which enclose it.

Track descends fairly steeply.

22½ **Günei**, large village, head-quarters of a nahie. The population was said in 1901 to number over 10,000. The village is picturesquely situated on the steep slope at the head of a valley running to the canyon of the Maeander 1½–2 miles distant. Most of the houses are lightly built after the Yürük style and rise in tiers one above another. There is a large khan.

Track ascends steeply and then runs W. over the plateau ; much vine cultivation.

25 Direction changes to WSW.

27 Spring. About here a track appears to branch W. to join the Bulladan–Alashehir road (Route 161).

Present route descends into the canyon of the **Dirbol Dere**, ascends SW. out of the valley, and continues over the plateau, alt. about 2,600 ft. Bulladan is seen to SW. ; to N. the plateau is dominated by a range of hills, on the slope of which lies Elisler village.

32 Descend to a terrace about 2,470 ft. high. This point commands a view of the plain of Pambuk Kalesi (Hierapolis), the serrated chain of the Buba Dag, and the dome-shaped Khonas Dag.

Track continues across undulating country with pine woods, descending gently past the heads of several valleys running NW. to the Alashehir Chai.

37½ **Bozalan**, alt. 1,895 ft., small village on the edge of a valley, the **Kairan Dere**, running S. A road from

miles

Alashehir to Seraï Kõi crosses the present route in or near the village. About  $1\frac{1}{2}$  mile S. is the site of Apollonos Hieron.

Track runs S. by W.

39 $\frac{1}{2}$ 

Cross the Kairan Dere, alt. 1,450 ft.

Track now runs SW., ascending over spurs from the r.

42

Bulladan, alt. 2,070 ft.

## ROUTE 163

BULLADAN—DEMIRJI (CHAL), 36 miles

This is a pack-route except for the first 2 miles. The country traversed is on the whole fairly easy. At mile  $15\frac{1}{2}$  there is a steep ascent up to the plateau-level, but beyond that point the gradients are easy.

Fair supplies should be obtainable for the first 16 miles. In summer water is probably scarce after the Maeander is left at mile  $11\frac{1}{2}$ . The valley-slopes from mile  $6\frac{1}{2}$  to mile 16 are well wooded, and there are scattered trees, mainly pines or valonia oaks, on the plateau.

The neighbourhood of the Maeander throughout the first stage of the route appears to be extremely liable to malaria.

An alternative route crosses the Maeander by the Ak Köprü about  $10\frac{1}{2}$  miles SE. of Bulladan, and then runs nearly E. for a few miles to the foot of the hills. Leaving the village of Mandama, where there is good water, to r., this track ascends the steep slopes and enters a gap in the mountains about 6 miles beyond Mandama. This pass, about 3 miles long, leads up to the plateau, from which the gorge of the Maeander can be seen to l. About  $2\frac{1}{2}$  miles beyond the pass are a kahve and guard-house near some ruins. The track descends slowly, and at one point about 3 miles beyond the

**kahve** has to cross a deep ravine. It seems to join the route detailed below some distance before Sazak (see mile 30 below).

miles

0 **Bulladan**, alt. 2,070 ft. Route at first follows the chaussée to Seraī Kōi (see Route 160, mile 33½).

2 Turn E. from the chaussée; many boulders on the slopes.

5 **Kash Yenije** village, alt. 735 ft. One half-mile to E. the **Dirbol Dere** emerges from the deep valley which it has cut in the plateau.

Track runs SE. across the Dirbol Dere and ascends an outlier of the plateau.

6 Ruins of the ancient Tripolis on the hill to l. This town apparently commanded the road between the valleys of the Alashehir Chai (anc. Kogamos) and the Maeander (Menderez Chai).

Track descends into the Maeander valley. Güneī is seen to NNE. (see Route 162, mile 22½).

6½ Turn NE. up the valley. The river here is swift and fairly broad; many rock tombs.

7¼ Mineral spring of moderately warm water. **Yenije Hammam**, bath-house beside the spring.

7½ Second hot spring upstream on the l. containing carbonic acid and iron; its overflow has formed a limestone deposit, about 15 ft. high and 100 ft. long, stretching as far as the river.

Cross the river by a weak bridge and ascend the l. bank, at first through maize-fields; figs, vines, and pomegranates.

8 The valley here opens out for a short distance; to r., over 300 ft. above the valley-floor, are the galleries of a small emery mine, not worked in summer on account of fever, which makes a stay in the valley impossible.

Track continues up the valley, which now becomes narrow.

10 Turn E., following the river and ascending over

miles

- a spur into a side-valley. The main valley here broadens out.
- 11½ Cross the stream in the side-valley and ascend the r.-hand slope in a general NE. direction, leaving the river.
- 12¾ **Dere Köi**, alt. 1,355 ft. The village formerly lay farther down in the valley, but the site was changed to escape fever. Its present position, however, is said to be even worse than the old. The valley is free from marshes, and it is suggested that the hot springs are the breeding-grounds of the mosquito.
- Track ascends E. through pines.
- 14 Turn NE. across the head of a side-valley and ascend over a ridge into another valley; steep slope towards the plateau on r.
- 14¾ Cross a stream in the second valley and ascend the next ridge.
- 15½ Track bends E. up the steep slope towards the plateau; to l. a stream descends WNW. to the Maeander.
- 16¼ Edge of the plateau. **Chinderi Yaila**, alt. 2,640 ft., summer pasture of the Yürük village of Chinderi, lies to N. on a terrace above the Maeander. The yaila is situated in the small stream valley, which here lies about 100 ft. below the general level of the plateau. There is some scanty cultivation with a few scattered pines.
- Track ascends gently E. up the flat valley. The S. side is a little higher than that on the N.
- 17¾ Cemetery on r.; some ancient ruins. The neighbourhood is covered with cereal and maize cultivation; here and there are a few pines and wild pears, which farther on give place to valonias. The valley merges into a uniform undulating plateau.
- 21 Summit, alt. 3,155 ft. The peaks of the Chökeles Dag are seen in the distance to SE.

miles

- Track continues E., passing a cistern.
- 23½ Begin to descend a side-valley towards the **Ak Dere** ; broad fertile depression to r.
- 25½ Mill beside the **Ak Dere**, alt. 2,190 ft. The stream comes from the **Chökeles Dagħ**.  
Track crosses the stream, ascends a side-valley E., and then runs across the plateau.
- 30 **Sazak** village  $\frac{3}{4}$  mile to l. **Kabalar** 2½ miles farther N. on the slopes of a group of hills.  
Track bends ESE. up the gentle northern slope of the **Chökeles Dagħ**.
- 31 A track comes in on the r. from **Denizli** (see Route 165, mile 5).
- 31½ **Türkmenoghlu**, single house.
- 33 Round a spur and begin to descend E. This point commands a wide view over the plateau to N. and NW. as far as the **Akhmedler Dagħ**, **Kemer Dagħ**, and **Omurbaba Dagħ** ; in front is the basin of the **Chal Ova** surrounded by gently sloping hills and cleft from S. to N. by the **Maeander**.
- 36 **Demirji** (or **Chal**), alt. 2,650 ft., large but poor village, with a fine barracks and **konak**, the headquarters of a **kaza**.  
The village lies not far from the **Maeander**, which on the S. side emerges through a gap in the hills and cuts a broad green valley about 150 ft. deep through the plain. The plain itself is almost treeless and largely cultivated, mainly with vines and opium. It contains a good many villages.

## ROUTE 164

## DEMIRJI—GÜNEİ, 27 miles

This track is unfit for wheeled traffic, and the country traversed is largely uncultivated. The hills near Demirji are bare of trees, but well cultivated with vines, poppies, and cotton. There are a good many villages in the district, and for the first few miles at least there are probably several alternative tracks. One of these follows the last stage of Route 163 to **Sazak** ( $6\frac{1}{4}$  miles) and then branches NW. across several streams or watercourses ( $8\frac{1}{2}$  miles) via **Kabalar**. Another route runs via **Alifakihlar** (1 mile) to **Zeive** ( $4\frac{1}{2}$  miles), whence it ascends to the crest of the hills (about 6 miles), where a wide view is obtained N. over the flat country round Göbek and the mountains between it and Takmak. The path then descends by a stony ridge through the village of **Develer** among vine cultivation, where the road via Kabalar comes in on the l. Then continuing over broken country intersected with many steep ravines it winds down into the **Maeander** valley nearly opposite the point at which the **Banaz Chai** enters it on the r. bank. The track crosses the Maeander by a bridge and follows the r. bank between wooded hills for about 2 miles. It then ascends to the W., the river running SW. through a deep narrow gorge between almost perpendicular wooded banks. After winding up several ravines, some of them well wooded, the path again reaches the plateau and running W. along the foot of a low range of hills descends a steep ravine to **Günei**.

The distance according to the most recent maps is about 27 miles.

## ROUTE 165

## DEMIRJI—DENIZLI, 33 miles

The route detailed here is a horse-track and fairly easy except for some rather steep gradients in crossing valleys. There is a good deal of cultivation along the track, and the water-supply appears to be sufficient. Timber is plentiful.

There seems also to be a road fit for wheels which runs S. via Seyyid ( $1\frac{1}{2}$  mile) and Isabey ( $5\frac{1}{2}$  miles) and then after skirting the hills on the W. side of the Baklan Ova to Balevi ( $11\frac{1}{2}$  miles) crosses the hills in a south-westerly direction. There are no villages on the route across the hills. A guard-house and kahve are passed, and the route descends to the valley and joins the road detailed as the route from Denizli to Khonas (see Route 167, miles 10–0).

miles

- |                 |  |
|-----------------|--|
| 0               | <b>Demirji</b> , alt. 2,650 ft. For the first 5 miles see Route 163 in the reverse direction (miles 36–31).  |
| 5               | Present route branches SW. from the Bulladan road along the NW. slope of the Chökeles Dagħ.  |
| $7\frac{1}{2}$  | Spring. Track rounds a spur, beyond which the mountain recedes somewhat to the E.  |
| $8\frac{3}{4}$  | Cross a steep-sided valley and ascend to a plateau over 3,600 ft. high ; cereal cultivation.   |
| $10\frac{3}{4}$ | <b>Penirji</b> (or Penir Damlar), alt. 3,850 ft., small village ; gardens and spring water.<br>Direction now WSW.  |
| $12\frac{1}{2}$ | Track crosses the heads of several valleys running N. and ascends towards higher plateau ; pine forest and tall junipers among rye and maize-fields.   |
| 15              | Summit, alt. 4,590 ft. ; maize cultivation.  |
| $16\frac{1}{4}$ | <b>Güzelbunar</b> , Yürük village in a small valley among poplars, alt. 4,050 ft. ; good water. The plateau here is well cultivated, and the climate is good ; fine view of the Khonas Dagħ and Buba Dagħ. |



miles

- Track now runs SSW., at first through cultivation. Farther on the plateau is wooded with pines.
- 17½      Fairly steep descent begins, along a ridge between two valleys; some pines.
- 19½      The pines now give way to oak scrub and pasture. Track here runs across fairly level ground, alt. about 2,300 ft.
- 21½      Track again descends.
- 23½      **Gyralan**, poor village on a spur, alt. 1,155 ft.; bad water.
- For the rest of the route there are no details available, but there should be no difficulty in dry weather. It runs via Ak Khan (see Route 167, mile 4).
- 33      **Denizli**.

## ROUTE 166

## SERAİ KÖİ—DENİZLİ, 13 miles

This road is a chaussée, but the going is bad. Supplies in moderate quantities are obtainable, and there is sufficient water from streams or springs. Information is lacking with regard to timber and fuel.

- 0      **Seraî Köi**.
- ¾      Railway station.
- 1½      Road crosses railway. Direction now ESE., skirting the hills which bound the Chürük Su (anc. Lykos) valley on the S.
- 2½      **Donjali** village to r. on a large watercourse (dry in August). Fine irrigated gardens here and farther on in the valleys on the r.
- 5      **Urumlu** village to r.
- 6      Road begins to bend round to nearly S., ascending the hills.

miles

- |     |  |
|-----|--|
| 7   | <b>Kumkisik Damlar</b> , a few houses. Cereal cultivation ceases.  |
| 7½  | Spring on l. Gradual ascent.   |
| 8   | Edge of upland plateau of <b>Denizli</b> , alt. 1,150 ft. Road bends ESE. again. Cultivation begins, mainly sesame. The low hills bounding the plateau gradually recede. |
| 12  | Cross the valley of the <b>Gümüş Chai</b> .  |
| 12½ | <b>Denizli Bazar</b> . Railway station to l.   |
| 13  | <b>Denizli</b> , alt. 1,300 ft.  |

## ROUTE 167

## DENIZLI—KHONAS, 15 miles

This road is a chaussée for about 10 miles, and should be practicable for wheels throughout in dry weather. Supplies are fairly plentiful, and there is an abundance of water, much of it, however, probably undrinkable (see under mile 10). There is little information as to timber on the route, but there appear to be patches of forest on the high ground S. of the road, while the slopes of the **Khonas Dag**h are partly covered with pines.

- |    |   |
|----|---|
| 0  | <b>Denizli</b> , alt. 1,300 ft. Road runs NE.   |
| ½  | Railway station, alt. 1,245 ft.   |
| 1  | Cross a stream.   |
| 2½ | Small stream to l. running NE. to the <b>Baghyrsak Dere</b> .   |
| 3  | Road bends E. round a hill.   |
| 4  | Cross the <b>Baghyrsak Dere</b> by a bridge of 3 arches. Near here is <b>Ak Khan</b> , alt. 775 ft., a square building with small round towers at the angles. A track comes in on the l. from <b>Demirji</b> (see Route 165, mile 23½). |

miles

A short distance beyond the bridge is a modern khan among irrigated gardens.

Road runs E. by S. along a flat terrace at some height above the plain to l.

6½ Cross to the N. side of the railway.

7¼ **Botzeli** station to r. The village of the same name lies a little farther on, to l.

8 Cross a small stream; kahve. A little farther on a strong spring rises at the foot of a low rise which closes the E. end of the Lykos plain.

Road bends N. for a short distance and then turns E. again.

9¼ Cross the **Chürük Su** (Lykos), here a strong stream with a swift current from a narrow valley in the table-land on the r. About ½ mile upstream the railway crosses the valley by a bridge.

Road ascends up the northern slope on to the plateau; barren soil, with scanty shrub vegetation.

9¾ Cross the railway.

10 Summit, alt. 1,170 ft. •The plateau rises gently towards the E. It is called the **Türkmen Ova**. The chaussée bends NE. towards the hills on the N. It runs to Demirji (see Route 165, introduction).

Present route follows a track SE. Several springs to l. form a strong stream running to the Chürük Su. The water contains sulphur and lime. Some ancient quarries and rock tombs are passed.

11 Several other springs to l. Track crosses the streams from them. All these streams flow between banks raised above the ground-level by the deposit left by the water.

11½ Bridge over the Chürük Su; many springs and watercourses. Some distance to W. a stream plunges down a cataract into the Chürük Su valley. Immediately to r. of the path are the ruins of Kolossai. Direction now S. by E. towards the Khonas Dagħ,

miles

which appears in front as a massive block with steep slopes cut on the N. by deep valleys and falling precipitously on the W.

The track runs at first through fine valonias, walnuts, and cereal cultivation, and then over bare uncultivated ground.

15

**Khonas**, alt. 1,945 ft., market village of about 500 houses ; head-quarters of a nahie under Denizli. It lies among trees along the mountain-foot.

## ROUTE 168

### KHONAS—CHIVRIL

This route probably coincides for about the first 10 miles with Route 173. It then branches to l. over the hills to **Asychal** (18 miles) and **Dede Kõi** (21½ miles). The latter village is situated on the eastern edge of the Baklan Ova and just in front of the northern fringe of the Beshparmak chain. Various tracks may be followed between here and Chivril. One of these runs N. across the plain via **Meler** (27½ miles) and **Khadem** (30 miles) to a bridge over the Maeander, beyond which it joins Route 169. The most direct way lies along the edge of the plain to **Chitak** (32½ miles). From here one road runs N. over the plain to a bridge across the Maeander and thence to join Route 169 at **Yaessi Kõi** (38 miles), which is about 10 miles from Chivril by the most direct road. Another route runs NE. to a Roman bridge (about 37 miles), whence there is again a choice of roads, either N. via **Karayashylar** (39½ miles) and thence by Route 169, or more to the E. via **Savrancha** (40½ miles) and **Omer Kõi** (44 miles) to **Chivril** (47 miles), the rail-head of a branch from the Ottoman line.

## ROUTE 169

## DEMIRJI—CHIVRIL, 26 miles

There is no chaussée between Demirji and Chivril, but except for the first 10 miles the country is nearly flat and fit for wheels in dry weather. Supplies and timber are scanty. Water is probably scarce for the first half of the route.

Remarkable mirage effects have been observed in crossing the plain.

The distances given below are only roughly approximate.

The hills on the l. of the route described here are traversed by numerous tracks by which Chivril may be reached. Paths branch N. from them over the Banaz Ova towards Inei and Ushak.

miles

0	<b>Demirji</b> , alt. 2,650 ft. Track runs N. down the Maeander valley.
2½	Cross the <b>Maeander</b> by a stone bridge.
3½	<b>Kayi Bazar</b> , large khan with 80 rooms. Every Monday the district fair takes place here.
5	Track ascends the E. side of the valley. <b>Yapchylar</b> to r.
6½	<b>Sevililer</b> (Söiler) village; wheat cultivation. The track ascends, and the country becomes bleak and dreary. From the summit a wide view is obtained E. and SE. over the Baklan Ova.
10	Reach the plain near the Maeander. The plain for about 10 miles is about 4 miles wide and perfectly flat; no cultivation, and no timber on the surrounding hills except a few trees near the villages. To SE. is a plateau about 200 ft. above the plain.
16	<b>Yaessi Köi</b> , large village. A road to Chivril via <b>Erjiler</b> (1 mile) and <b>Muglich</b> (4 miles) branches to l. Farther on the plain is marshy.

miles

19½

**Karayashylar** beside the **Chufu Chai** (Kufu Chai), which enters the Maeander about 2 miles to S.

A bridge crosses the stream here, carrying a road which runs E. to the railway bridge over the Maeander, and then via **Sondurlu** (7½ miles), **Injirli** (12 miles), and **Jerid** (20 miles) to **Dineir** (24½ miles).

There are at least two roads from here to Chivril. One of these runs via **Sokhma Kõi** (2 miles to N.), the other via **Muglich** (1½ mile NW.). The former is the shorter.

26

**Chivril**, alt. 2,800 ft.

## ROUTE 170

USHAK—CHIVRIL, 37 miles

This is an easy horse-track. Supplies in small quantities should be obtainable throughout. Timber is scarce on the plain between mile 4½ and mile 12, but a certain amount is found along the other stages of the route, in the valleys and on the slopes of the Burgaz Dagh. A good many of the streams are probably dry in summer. There are springs at miles 18, 23½, and 30.

Alternative routes may be found to W. of that described here, there being a good many villages on the plateau linked up by tracks.

0

**Ushak**, alt. about 3,000 ft. Track runs SE. across the railway and then over a number of easy undulations, between which lie broad dry valleys from the SW. The land is fertile, with cereal and maize cultivation interspersed with single valonia oaks.

3½

**Kara Chiftlik**. Track descends into a broad valley.

miles

- 4 Bridge over the **Ushak Chai**, alt. 2,660 ft. ; there is a second bridge a little farther downstream. The stream contains little water in July.
- 4½ Cross the **Chamly Chai**. This stream contains more water than the Ushak Chai, which it joins some distance downstream.
- Track again ascends to an undulating plain ; cultivated fields and pasture ; no trees.
- 6½ **Tepesikurlu Demirli Chiftlik.**
- 7¼ Highest point of plain, alt. 3,180 ft. The grey marble wall of the Burgaz Dagh is seen bounding the plateau in front, and beyond its northern end a number of conical peaks forming the Ahar Dagh.
- 8¼ Cross a valley.
- 8¾ **Yapaklar**, Yürük village between the valley just crossed and another smaller one which joins it a short distance to r.
- Track crosses the head of the second valley and again ascends to the plateau.
- 10½ Summit, alt. 3,255 ft. The ground now sinks SE. towards a system of valleys which unite to form one running to the Banaz Chai.
- 12 **Akarja** village in a small valley.
- 13 Cross a stream ; the valley-floor is broad, with cultivated fields, high oak scrub, and valonias.
- Track descends the valley SSE.
- 15 Tumulus.
- 17 The stream on the l. joins the Banaz Chai. **Chiftlik** village on the l. bank near the junction.
- Ford to l. bank of the **Banaz Chai**, alt. 2,565 ft. Track bends E. up a side-valley.
- 18 Spring on l.
- 18¾ Track turns SSE. up the S. side of the valley and continues over level plain, gradually approaching the Burgaz Dagh ; cereal cultivation here among valonias.
- 21½ **Sivasti**, alt. 3,025 ft., Yürük village at the bottom

miles

of the lowest slopes of the Burgaz Dagħ, which are covered with valonias, while higher up is a sparse growth of pines and junipers.

Tracks branch N. and NNE., uniting after some miles, to **Ahat Kōi**, whence paths run to Ushak, Islam Kōi, Afiun Kara Hissar, and Sandykly.

Another track runs W. through **Afghan** village to Göbek and Inei.

Present route continues SSE. near the foot of the hills.

23½

**Bunarbashy** village beside a large spring.

26

Cross the **Kuru Chai**, a watercourse (dry in July) which comes down from a large valley in the mountain to l.

Direction now almost due S.

29

**Burgaz**, alt. 3,060 ft., large Yürük village 1½ mile from the foot of the mountain; many springs. A difficult track branches to l. over the hills from here to Khojalar (see Route 171, mile 28). From Burgaz a large valley runs first SW. and then W. to the Banaz Chai. The neighbouring region is partly cultivated, partly covered with valonia forest.

Direction now ESE.

30

Large spring and ruins of a mosque. The plateau here is fertile, growing cereals, vines, walnuts, and valonias.

30½

**Japarlar** village at the foot of the Burgaz Dagħ.

Track turns S. across a stream-bed, which runs WSW. to join the valley from Burgaz.

34½

Cross a saddle, alt. 3,270 ft. View opens out over the plain of Chivril lying over 300 ft. below the level of the plateau. The plain contains many villages and is well cultivated but marshy. There are very few trees.

37

**Chivril**, alt. about 2,800 ft.



## ROUTE 171

## CHIVRIL—TOLUMBUNAR, 53½ miles

This road is fit for wheels at least as far as mile 17, beyond which point it appears to be partly fit for wheels, partly a fairly easy pack-route. The Chufu Chai defile, however, is impassable in winter (see mile 15).

Supplies are not obtainable except in small quantities after the plain of Chivril is left at mile 5½, the villages passed on nearly the whole of the rest of the route (as far as Chiftlik Kõi, mile 49½) being inhabited by Yürüks.

There is a good deal of timber to about Ulu Kõi (mile 39). From there the country changes in character. While the southern slopes of the Ahar Dagh are broken by deep wooded ravines, the northern present a bare down-like appearance, broken only by gently sloping valleys.

Most of the streams are probably dry in summer. There are springs at miles 17½ and 30.

miles

0      **Chivril**, alt. about 2,800 ft. Route runs NE. to the foot of the hills and then turns E. In summer the Chufu Chai is dry, and it would be possible to go straight ENE. across the river-bed to Ishikli.

3¼      Bridge over the **Chufu Chai**, which comes down a broad valley on the l. and flows SSW. to join the Maeander.

5½      **Ishikli**, alt. 2,660 ft., formerly a market town and head-quarters of a nahie but now superseded by Chivril. Behind the village the Ishikli Dagh, a western outlier of the Ak Dagh, rises to about 1,300 ft.

Track now turns first NW. and then NNE. up the broad valley of the Chufu Chai. The slopes on either side are gentle. On the E. side about 500 ft. above the river is a hill terrace broken by many water-channels and covered with grass and sparse

miles

scrub vegetation. Farther on the terrace is cultivated in places. Then follows a forest of junipers about 30 ft. high.

11½

**Osmanköi.**

15

**Chapraklar** to l. beyond the river in a gently sloping cultivated side-valley.

Track descends to the river. Direction now NE. through a winding pass. The river-bed fills most of the defile, which is impassable in time of flood. Juniper forest along the sides of the ravine.

17½

Track emerges from the defile. The valley now becomes broad and easy. Its floor is dotted with valonias, and the higher slopes are still clothed with junipers.

The valley widens out NE. and E. to the plain of Sandykly, to which a carriage-road runs, skirting the northern outliers of the Ak Dagħ for about 11 miles and then striking across the plain. When the road by the river is impassable in winter a track over the hills into the plain at Sorkum is followed.

Present route crosses the river to a spring, beside which are a karakol and khan, alt. 3,085 ft. It then continues NE. along the foot of the hills on the l.

20½

**Giovrek** (Yanyk Ören) village on l., ¼ mile from the river; tumulus on r. The valley here is about 1 mile wide.

Track turns N. over low flat-topped hills. The hills to S. are much higher and better wooded. Cultivated fields and scrub now alternate with dry pasture and prickly camel-thorn.

23

**Yavashlar**, large village on l. Track crosses a rise into the valley of the **Aram Chai**, a tributary of the Chufu Chai, which it follows NNE.

25

A road fit for wheels comes in on the r. from Sandykly.

miles

- 28 Direction now NNW. up a side-valley.  
**Khojalar** village.

A direct road from Sandykly via Ala Göz village comes in on the r. There is no evidence to show if it is fit for wheels between Sandykly and this point. It continues, apparently as a carriage-road, up the valley and over a pass to Ahat Kõi and Ushak.

- 30 The present route ascends over a ridge and descends again NE. into the Aram Chai valley.  
 Mill and spring. The valley becomes narrower.  
 Direction N.

- 32 **Ashaghy Akche Badryk** village; scanty scrub on the upper slopes.

Another track from Sandykly to Ahat Kõi crosses the route here (see Route 174, mile 38½).

- 34½ Direction bends round to E. by N. The valley-floor widens and is cultivated. In spite of the elevation cotton is grown here. The hills are covered with pine forest.

- 37 **Yaghjy Kõi**, Yürük village, alt. 4,120 ft.; saw-mill and fine oda. Tracks run from here to Afün Kara Hissar and Sandykly.

Track now runs W. by N. for some distance and then turns N. up a valley. The mountain group to r. is called Ahar Dag.

- 39 **Ulu Kõi**. Track ascends the western slope and then turns N. again, partly through pine forest, partly over bare downs.

- 43½ Summit, alt. 5,285 ft. Descend into a valley.

- 44½ **Balij** village, alt. 4,785 ft. The stream in the valley forms the main upper tributary of the Porsuk Chai.

Track ascends gradually N. along the eastern slope; pasture-land and scanty scrub with patches of cultivation.

miles

47½

**Karaköseli** village ½ mile to r. with meadows and cultivated fields among gently sloping hills. On its N. side a stream winds W. to the Porsuk Chai.

Track again descends into the valley, which now is broad and fertile, and crossing the stream follows it N.

49½

**Chiftlik Kõi**, alt. 4,050 ft., the first non-Yürük village since Ishiklü.

Track ascends over the easy cultivated ridge on the NW. side of the valley. On the far side are a few pines. Then the path crosses a broad saddle and descends towards the railway.

52½

Cross the railway, alt. 4,145 ft.; tunnel to l., station 1 mile to r. About here is the watershed between the Banaz Chai and Porsuk Chai.

The rise of the ground makes a sort of step about 5 miles broad, across which runs the natural line of communication followed by traffic coming to the neighbourhood of Afiun Kara Hissar from Ushak and the plateau of Banaz Ova 600–700 ft. lower.

Immediately N. of the railway is a large tumulus surmounted by a tekke. From the summit, alt. 4,200 ft., there is a view E. over the plateau and the broad valley plain of Tolumbunar and the Porsuk Chai. On the W. one looks down into a small valley system, to which the watershed falls steeply and whose waters join to form the Hammam Su, a tributary flowing SW. to the Banaz Chai.

53½

**Tolumbunar**, alt. about 4,000 ft.; abundant springs.

## ROUTE 172

## ISHIKLI—DINEIR, 27 miles

This road appears to be unmetalled. It should be fit for wheeled traffic except in wet weather, when most of the plain becomes a marsh. Supplies are fairly abundant, and there is good grazing. There is no information as to fuel.

miles

- |                  |  |
|------------------|--|
| 0                | <b>Ishikli.</b> Road runs ESE. along the foot of the hills.  |
| 2 $\frac{3}{4}$  | Cemetery.  |
| 3 $\frac{1}{2}$  | Direction now SSE. close to the foot of <b>Ak Dagħ</b> ; swamp and reeds to r. ; some trees ; herds of cattle and horses.  |
| 8 $\frac{3}{4}$  | Cross a small stream which rises not far from the road and flows to the marsh ; small hill to r.   |
| 10 $\frac{1}{2}$ | <b>Khoma</b> , small village beautifully situated among trees. The mountain rises precipitously behind, black in many places with iron ore, and a stream comes down the rock-face in a cataract driving several mills.<br><br>A short distance beyond <b>Khoma</b> a road fit for wheels branches to l. up a pass called <b>Duz Bel</b> and then through another called <b>Tulu Bogħaz</b> . It meets the road from <b>Dineir</b> to <b>Sandykly</b> and <b>Afiun Kara Hissar</b> (see Route 174). |
| 11 $\frac{1}{4}$ | Cross a wide stream (shallow in September). <b>Chandyr</b> village lies to r.  |
| 14               | Marsh and reeds again close to r., with a small lake called <b>Gök Göl</b> in the middle.  |
| 15 $\frac{3}{4}$ | Direction SSE., still at the foot of the mountain, with the marsh to r.  |
| 18 $\frac{1}{2}$ | Cemetery. Track crosses a fair-sized stream called <b>Yepalel Chai</b> , which rises at the mountain-foot to l. and drives a mill.   |

miles

- 19 $\frac{1}{4}$  Direction more SE. The plain is now much narrower.
- 23 Dineir comes in sight ; marsh surrounded by reeds to r. on both sides of the river.
- 27 **Dineir**, head-quarters of a nahie in the Sandykly kaza of the Brussa vilayet ; station on the Ottoman line ; P. and T. The place numbers about 400 houses, with a population given in 1914 as 2,600. It stands on the site of the ancient city of Kelainai. The Maeander has its sources near the town.

## ROUTE 173

## KHONAS—DINEIR, 58 miles

There is no recent account of this route available. Before the building of the railway the country was little cultivated, and a considerable stretch of it seems to be incapable of cultivation. Water is scarce in summer. Timber appears to be fairly abundant on the hills.

- 0 **Khonas.** Track runs at first nearly E. along the foot of the Khonas Dagħ.
- 5 Village to r. at the mountain-foot.
- 7 Cross the main stream of the Chürük Su, which comes down a wooded valley on the r. It is here called **Sagh Su**.
- 8 $\frac{1}{2}$  High steep hill (? Sivri Tepe) to r., down which comes a torrent-bed (dry in April) ; below it is a white mineral deposit similar to that at Pambuk Kalesi.
- Track now bends to l. towards the head of the plain.
- 12 The hills on either side now close in, leaving a passage of only a few hundred feet in width.

miles

- 13½ Two springs of good water. A little farther on, to l., is a large cemetery.  
Track now enters a wide plain.
- 17 Cross a wide watercourse (dry in April). The hills again close in.
- 18 Kahve. In front is another large wide plain ; undulating wooded hills to l.
- 23 Fountain among a clump of trees ; village some distance to l. The ground now begins to sink gently.
- 25 Large ruined khan and village of **Chardak**.  
Track now runs nearly E.
- 27 Reach the western end of the **Ajy Tuz Göl** ; one or two fresh springs among the reeds along the lake. On the l. rocky pine-covered hills rise steeply about 200 yds. from the road.
- 33 Direction now a little N. of E., the lake some distance to r.
- 34½ Village to l. The rocky heights now give way to much lower rounded hills.
- 36 The lake disappears from view for about 1 mile.
- 37½ Large cemetery ; village to N. of the road. The low hills to l. recede at nearly a right angle.
- 38 Open plain to l.
- 41½ Cemetery and eastern end of the lake. Gradual descent.
- 43 Deep well beside the road.
- 46½ Cemetery to l. and, a little beyond it, the remains of an ancient paved road.
- 50 Cemetery.
- 51 Reach the end of the plain.
- 52½ Track descends a limestone ridge.
- 54 Village to l. Track enters the **Dineir Ovasy**.
- 57 Bridge over the **Maeander**.
- 58 **Dineir**.

## ROUTE 174

## DINEIR—AFIUN KARA HISSAR, 70 miles

This road is probably fit for carts throughout in dry weather. It appears to be metalled from Sandykly (mile 30½) to Afiun Kara Hissar. Limited supplies should be obtainable. Timber is scanty, and water is probably scarce in summer as far as Sandykly.

miles

- 0     **Dineir**, alt. 2,850 ft. Road runs N. past a hot spring, which is one of the sources of the Macander.
- 1½     Direction changes to NE. up a valley in the **Samsun Dagħ**. To r. and l. are rounded rocky hills partly covered with scrub.
- 2½     Summit, alt. 3,435 ft. Road descends into the **Dombai Ovasy**.
- 5½     **Kyzylköi** on r. Alt. here 3,240 ft.
- 6     Cross a stream flowing S. to the **Bunar Bashy Göl**.
- 6¾     **Dombai** village.

A road here branches E. to **Beyköi** (2 miles) and then N. over the hills to **Ballyk** (11½ miles), whence the route detailed in the itinerary may be joined either at Kusura (see mile 21½ below) or farther N. by a track running via **Miryile**, a village lying about 1½ mile E. of Kusura.

The present route turns N.

- 7¾     Cross a stream 6 ft. wide by a rickety wooden bridge.
- 8½     Summit of a low rise, alt. 3,370 ft.
- 9¾     **Kazan Bunar** village with a fine spring near the road; alt. 3,320 ft. Considerable cultivation here.

An alternative route from **Kazan Bunar** to **Kusura**



miles

branches to l. here. It runs to **Avshar**, a Turkmen village near some springs flowing S., and then ascends steeply up some low hills to a watershed (2 miles from **Kazan Bunar**). About  $1\frac{1}{2}$  mile farther the carriage-road from **Khoma** to **Yalovach** is crossed (see also Route 172, mile  $10\frac{1}{2}$ ), and after another  $1\frac{1}{2}$  mile **Kyzyl Ören** is reached. The track then rounds a hill into a broad open valley, across which it runs via **Sinekli** to **Kusura** (about 13 miles from **Kazan Bunar**).

Present route now ascends to undulating plateau.

12 $\frac{1}{2}$  Spring ; less cultivation than pasture here. Ascent begins NNW. up low hills.

13 $\frac{3}{4}$  Cross a saddle, alt. 3,455 ft.

15 Second saddle, alt. 3,460 ft.

16 $\frac{1}{4}$  Third saddle. Road enters the open plain of **Kusura**.

17 $\frac{1}{2}$  Well. **Sinekli** village to l. **Ballyk** village to r.

21 $\frac{1}{2}$  **Kusura**, large Turkish village with well, alt. 3,290 ft.

Tracks come in here from **Ballyk** and **Sinekli** (see under mile  $6\frac{3}{4}$  and mile  $9\frac{1}{4}$  above).

Some distance farther down the valley is **Ilja**, where there are hot springs and baths.

30 $\frac{1}{2}$  **Sandykly**, alt. 3,420 ft., head-quarters of a kaza in the **Afun Kara Hissar sanjak** of the **Brussa vilayet** ; P. and T. ; pop. 7,000–8,000 ; 2 khans.

Road is now metalled and runs NW. across flat fertile plain. The hills to r. are rocky and without wood. Several streams from the r. are crossed.

31 $\frac{1}{2}$  Cross a stream by a stone culvert.

33 $\frac{1}{2}$  Second stream with stone culvert.

Road continues NW., leaving **Ekin Hissar** village to r. and **Ürküt** to l. and then crossing another stream.

A direct track runs N. from **Sandykly** to the hills

miles

and winds over them to **Hajan**, some distance beyond which it joins the araba-road.

37 Direction now N. over undulations parallel to the **Karadere Chai**. **Iresik** village lies about 1 mile to E.

38½ **Kelenderes** village about 1 mile to W.

About here apparently a track branches to l., forking after some distance. One branch crosses Route 171 at mile 32. The other seems to cross the eastern spurs of the Ahar Dagħ and to meet the same road at Chiftlik Kōi (mile 49½).

39 **Bashaghach** village to l. among trees.

An alternative route to Afiun Kara Hissar, less used now than the chaussée here followed, appears to branch to l. about here. It crosses a summit called **Hasan Beli** to W. of the Kylyj Arslan Beli (see mile 48½ below) and descends into the Sychanly Ova near the village of **Pasha Kōi**. The pass by Hasan Beli is said to be steeper and longer than that followed by the present route.

Chaussée turns towards the E. and ascends up a narrow pass.

39½ Spring running from a pipe.

40 Summit and second spring.

Road now descends E. into the **Küchük Sychanly Ova**, which lies at a considerably higher altitude than the plain of Sandykly. The road after the pass is left is about 18 ft. wide.

41½ Direction becomes NNE., diagonally across the plain. There is considerable cereal cultivation here and good grazing in June.

An alternative route over the hills into the Sychanly Ova branches to r. at some point in the plain. This track runs via **Saoran** village. From Saoran this path ascends a steep ridge to a summit (apparently

miles

called Tilki Kyry Bel), from which it descends a narrow ravine beside a clear stream into the Sychanly plain.

44 Cross a river by a wooden trestle bridge of about 45-ft. span.

47 Foot of the hills; scrub and scattered trees. Road ascends.

48½ Summit, **Kylyj Arslan** (or Damnar) **Beli**, alt. 4,210 ft.; rounded hills to r. and l. with low scrub.

Road descends a narrow winding gorge, passing a fountain and drinking-trough. It is revetted in places with stones to a height of 10 ft.

48¾ Stream from the r. now accompanies the road, generally on the r. side of the valley.

51½ Edge of the Sychanly Ova. The plain is rich and well cultivated and lies about 400 ft. lower than that of Saoran; many villages.

In front, to r. is the steep volcanic ridge of Afium Kara Hissar; to l. easy undulating ridges, partly wooded.

52 Cross a stream.

53 **Kylyj Arslan** village a little to l. **Sinir Kõi**, large village with white minaret about 2 miles to r. on the edge of the plain.

53¾ Stream from the r.

55¾ Stream from the r. **Ak Ören** village on the l. bank.

57 Stream from the r. Road ascends a broad depression, crossing two saddles of about equal height; some cultivation in the valley and patches of grass on the hills.

60 Second saddle, alt. 3,645 ft.

About here a road from Ushak comes in on the l. (see Route 116, mile 58).

Steep and difficult descent to the plain of Afium Kara Hissar.

61¼ Road joins the chaussee from Kutahia (see Route 120).

70 **Afium Kara Hissar**.

## ROUTE 175

## SOKIA—MILAS

*Via* AKBUKI, about 76 miles

This route is fit only for pack-transport. Supplies are generally scanty after the Maeander plain is left, and between the spring S. of Ak Kõi and Akbuki Bay there is very little water. The streams flowing into Kovella Bay 2 or 3 miles N. of Yeronda appear to be perennial, and there are said to be some cisterns and pools. From Akbuki onwards water is probably plentiful.

From **Sokia** the route follows the path detailed in the reverse direction in Route 135 to **Kelebesh** (9 miles). Here it strikes S. across the old bed of the **Maeander** and traverses the level partly marshy plain. The northern part of the plain is treeless steppe partly occupied by cereal cultivation but largely pasture-land or covered with liquorice scrub. Many black-felt tents of nomad shepherds may be seen, and large herds of cattle, horses, camels, and sheep. When the Maeander is in flood considerable tracts of the plain are under water, which is in places girth-deep. A ferry over the new bed of the river is reached opposite the village of **Balat**, which stands on the site of the ancient city of Miletus (18 miles). Malaria is extremely prevalent here. About 2 miles to W., at the eastern end of a low line of isolated hills on the N. side of the main channel of the Maeander, is the village of Patnietiko.

The track now ascends fairly steeply SSW. on to rolling plateau partly covered with fields and gardens and reaches the Greek village of **Ak Kõi**, alt. 435 ft. (22½ miles). About 1½ mile S. of Ak Kõi a spring is passed, from which the track runs SW., crossing numerous small waterless valleys to the coast at **Hagios Nikolaos** (26½ miles). The coast is now followed for about 3 miles. Then the track crosses by bridges

two streams flowing into Kovella Bay and runs inland to **Yeronda**, alt. 230 ft. ( $31\frac{1}{2}$  miles), famous as the site of the largest temple of Apollo in Asia Minor. The modern village is Greek and has a large church. A Turkish village of the same name lies about 2 miles NE. The track now turns E. over barren country to **Akbuki** (44 miles) at the head of the bay of the same name. A mile or two before the village is reached a track comes in from Sakyz Burnu (see Route 176, mile  $34\frac{1}{2}$ ). From Akbuki the track runs first E. and then ESE. up a stream valley to **Kazykly** ( $49\frac{1}{2}$  miles), the chief village in this district, beyond which it runs SE. along the slopes above a fertile well-cultivated plain. The hills are covered with pine forest, and one or two small villages are passed. At about  $5\frac{1}{2}$  miles from Kazykly the small plain of **Kyzyl Aghach** is entered. The village lies about  $\frac{1}{2}$  mile E. of the road. After crossing the plain the track again ascends the hills in a southerly direction through pine forest to the fine well of **Sindav Kuyun** (59 miles), whence it descends a stream valley first SE. and then E. to **Asyn** (62 miles), a small village near the ruins of the Karian city of Iasos. A short distance beyond Asyn the valley of the **Sary Chai** is reached, where the road strikes up the r. bank of the river. The river is crossed after a few miles, and the road bends NE. along the chaussée which runs from Kuluk to **Milas**.

The total distance is about 76 miles.

## ROUTE 176

### MILAS—SOKIA

*Via BAFY,  $54\frac{1}{2}$  miles*

This route is fit only for pack-transport. Supplies in small quantities should be obtainable except along the S. side of the Bafy Deniz. Timber and scrub are plentiful except in the Maeander plain, and water should be sufficient.

miles

- 0      **Milas**, alt. 165 ft. Track runs NW. across spurs from the hill to l.; marshy plain, drained by the **Sary Chai**, to r.
- 4½      Cross the river by a stone bridge.
- 6½      **Köshk Kōi** to l. at the foot of a hill. Track skirts the E. side of a long plain running S. to the **Sary Chai** plain.
- 9      **Küchük** and **Büyük Sultan Hissary**, large villages on the slope of the **Kashyky Dag**h to W. Ancient ruins along the track.
- 10½      **Mendelia**, alt. 175 ft., large market village on a spur of the hills; bazar and large Greek colony.  
Track now turns W., crossing the **Kandak Dere** and **Derenje Dere**, which come down large valleys from the N. and join about 1 mile to S. The united stream drains the valley S. to the **Sary Chai**.
- 13½      **Tekke Deresi** village to r.
- 16      **Tanyzmaly** (? **Danashman**) village to l.  
Track continues W. over a spur from the **Kashyky Dag**h, and then N. through wooded hills.
- 20      **Bafy**, Turkish village. Ruins of an ancient city on a hill to NE.  
Track runs NW. across sandy plain; olive cultivation and many ancient ruins. Farther on it ascends over spurs which fall steeply to the **Bafy Deniz**.
- 21½      **Mersenet** village lies to l. out of sight behind the hills. About here a track from **Akbuki** is crossed (see Route 177, mile 8½). A fine ancient cistern, with 14 steps leading down to it, is passed farther on, and a view of the lake opens out. Here the track descends into a plain running E. and W., and then ascends over limestone plateaus into the **Maeander** plain.
- 34½      **Sakyz Burnu** (or **Taliani**) village some distance S. of the narrow and slow but very deep stream which

miles

drains the Bafy Deniz into the Maeander. A track comes in here on the l. from Akbuki. Ferry across the Maeander about  $\frac{3}{4}$  mile to W.

Route crosses the stream by a bridge and runs NE. over the plain between the W. end of the lake and the Maeander; ground sandy, here and there overgrown with tamarisk scrub. The lake to r. was formerly an arm of the sea, from which it is now separated by the silting up of the Maeander delta. Between it and the river there is only a low belt of alluvium. The water is brackish and full of fish, which are said not to be good eating.

38 $\frac{1}{2}$       **Chirchin Yaila** village. Another village, called Chirchin Kyshla, lies 2 $\frac{1}{2}$  miles to E. on the far side of a bay which the lake sends up here to N. This bay is very shallow and full of reeds and divided from the deeper water by a dam. The inhabitants of the two villages navigate the lake in small boats of primitive construction bought from the Cossack fishers of Lake Manyas, who are said to come occasionally as far S. as this in their canoes.

40      Cross the **Maeander** by a bridge opposite **Sarykemer** village; continue NNE. over treeless level plain.

45      Cross an old branch of the Maeander.

51 $\frac{1}{2}$       Cross the main ancient channel of the river.

54 $\frac{1}{2}$       **Sokia.**

## ROUTE 177

AKBUKI—KOCHARLY, 43 miles

This route has no importance as a line of communication. It is fit only for pack-transport and is given here for the details it supplies of the rugged Beshparmak region. Supplies are not procurable except in very small quantities. Water, timber, and scrub are generally plentiful.

miles

0      **Akbuki**, Greek village. Track runs NE. across the small cultivated plain of Akbuki and ascends the ravine of a watercourse. Outcrops of emery and iron ore may be seen.

5      Saddle in the main ridge of **Chatal Alan**, alt. 2,100 ft. A stream valley from nearly the level of the col runs first SW. and then NW., dividing the northern part of the mountain into two ridges. The mountain is stony and bare except for patches of pines.

Track winds down the eastern slopes.

7½      Direction now N. down a valley.

8½      **Mersenet** village, alt. 330 ft. The adjoining slopes are overgrown with pines, olives, and maquis. A large spur broken by small ravines runs down NE. to the plain of Bafy. Track crosses the stream from the valley followed from mile 7½ and runs NE., crossing Route 176 about mile 21½.

11      Cross the stream from Bafy village and turn N. past old marble quarries, alt. 213 ft.

12      **Bujak**, small village on a steep rocky hill at the eastern end of the **Bafy Deniz**. Between the village and the lake are a small plain and a marsh; many mosquitoes here.

Track now winds NW. along the eastern side of the lake.

13¾      **Kapykeri**, small village; ruins of the ancient Herakleia rising from the lake up the slopes of a rocky spur of Beshparmak.

Track crosses a small plain and winds N. up wild rocky slopes.

16      Mediaeval monastery on l.

17      Summit, alt. 1,420 ft. Descent towards the broad valley of a tributary of the Maeander.

18¾      Cross the stream in the valley. **Kyörpalan** village, alt. 625 ft., between the stream just crossed and another which joins it a little to N.; pasture in the



miles

valley. Near here is a spring containing carbonic acid and iron, and there is an outcrop of blue lead.

Direction now NE.

21½ **Karakaya**, a few huts (abandoned in 1904). Track again ascends.

22 Col, alt. 1,055 ft. Track continues winding NE. over the valleys drained by the head-waters of the Kysyr Chai, a tributary of the Maeander. **As Tepe** lies to N.

26 **Chavdar**, small village, alt. 1,865 ft., on undulating plateau among fields dotted with single pines.

Track now runs E. across a few ridges and valleys sloping N. ; pines and scrub.

28½ **Yaya Köi**, small village. Descent into the deep gorge of the **Sary Chai**. Alt. at river-crossing 1,700 ft. In places the stream disappears under natural bridges formed of granite boulders.

Track then ascends and winds northwards across the undulating plateau stretching N. from the foot of Beshparmak.

31 **Masyn Kalesi**, alt. 2,190 ft., ancient and mediaeval ruins on an easy rounded summit rising out of the plateau. This was the site of the ancient Amyzon. Wide view to N. over gently rising partly cultivated plateau with several villages ; to SW. is the serrated ridge of Beshparmak and to S. the equally serrated ridge of Tekkeler Dagħ ; to SE., farther away, the broad ridges of Gök Bel and Madaran Dagħ falling to the depressions of Karpuzly and China.

Track descends gently N. between fields and ever-green scrub.

32½ Valley-bottom, alt. 1,710 ft., with vine and olive cultivation. Track again ascends.

33½ **Mersibelen** village, alt 2,000 ft. The chief local occupation is the collection of pine kernels and the preparation of olive-oil.

miles

- Track proceeds through pine forest.
- 34½ Summit of an easy ridge, alt. 2,520 ft., with a number of rounded summits.  
Route continues N. through a valley with rye cultivation among pines.
- 37½ Second wooded ridge, **Yinyin Tash**, alt. 2,635 ft. Descent across the Yinyin valley; chestnut-trees here; alt. at valley-bottom 2,180 ft.
- 39 Third summit, alt. 2,400 ft.; view down into the Maeander valley. Steep descent into a short deeply cut valley system, on the slopes of which are three villages near one another; chestnuts, pines, and vine cultivation on the slopes below 1,600 ft.
- 40½ **Kiminjile** village on the N. slope of the valley system.
- 41½ Summit of last ridge above the Maeander valley, alt. 1,495 ft.  
Track descends through olive cultivation past the village of **Chorpalan**.
- 43 **Kocharly**, large village on the edge of the Maeander plain, alt. 115 ft.; population mainly Greek.

## ROUTE 178

## AİDİN—MUGHLA, 70 miles

This route is a chaussée which in May 1907 was reported to be practically impassable for wheels, owing to faulty construction, and apparently little used except for local traffic. In 1913 it was fairly good, at least as far as Eski China (mile 30½). Most of the bridges are of iron, and some are over 50 yds. long. Supplies, water, and timber should be generally plentiful.

- 0 **Aidin**. Road runs S. by E. across the plain.
- 2 Cross the **Tabak Chai**.
- 4½ Cross the **Maeander**, alt. 130 ft. Direction changes to SW.

miles

- 6½ Ascend a spur and descend on the other side into the valley of the **China Chai**.
- 7¾ Reach the stream and ascend the valley SE.
- 9½ Valley narrows. A track comes in on the l. from Sokia via Kocharly.
- 16 The valley now opens out; several villages on the slopes to l.
- 16¾ A track branches to r. to Milas (see Route 179).
- 17¾ Cross just above its junction with the **China Chai** a large tributary, the **Karaïdin Su**, which comes down a deep ravine from the NE.
- Several villages to l. at the mouth of the ravine.
- 20½ Brook flowing to the river. **Yokary Chalty** village 1½ mile to l.
- 21 **Ashaghy Chalty** village ½ mile to l.
- 22¼ Stream. A track comes in on l. down the **Karaïdin Su** valley. **Giletmes** village ½ mile to l.
- A short distance on a track branches S. across the plain through **Karaullar** and **Karaman Kõi** and thence across the river and over the hills to **Eski Hissar** (see below, under mile 42¾, and Route 180, miles 1¼–8½).
- 24 Stream.
- 24½ **Gyrova**, small market village and head-quarters of the **China kaza**. **Karaullar** village 1½ mile W. in the plain. **Mutablar** 1½ mile E. on the hills.
- Cross a stream which joins that mentioned under mile 24 a mile W. of the town. Road runs through gardens.
- 26 Stream, alt. 290 ft. **Karaman Kõi** downstream 1½ mile to W. **Evjiler** 1½ mile E. on the slope near the source of the stream. **Kahve** a short distance on.
- 28¼ Stream.
- 29 The road still keeps along the hills, crossing a stream, to an iron bridge over the river 1 mile farther on. In 1907 the bridge was broken, and the

miles

river had to be laboriously forded  $\frac{3}{4}$  mile upstream just S. of the point now reached.

30 Bridge. Road bends W. round the hill.

30 $\frac{1}{2}$  **Eski China**, a wretched village with ancient remains, perhaps those of Hydissos. Road skirts the town on the W. and turns SE. along the hills overlooking the river valley on the W.

32 Road passes under an aqueduct, probably Byzantine, alt. 375 ft.

32 $\frac{1}{4}$  Stream, alt. 690 ft.

33 $\frac{3}{4}$  **Dokurjun Kahve**, alt. 730 ft. Some distance NE. are the ruins of an ancient watch-tower, and to E. the remains of an arched bridge over the river.

34 $\frac{1}{4}$  Alt 750 ft. Descent into a valley.

35 Foot of descent, alt. 620 ft. Cross a stream and ascend the slope in front by a zigzag road.

37 **Süjü**, **Yürük** village, alt. 1,145 ft. Road ascends to 1,260 ft.

38 $\frac{1}{4}$  Stream.

39 $\frac{1}{4}$  Stream, joined  $\frac{1}{2}$  mile to l. by another, which the road crosses a short distance farther on.

40 $\frac{3}{4}$  **Koja Kavak Kahve**, alt. 1,125 ft., reached after a sharp descent.

41 $\frac{1}{2}$  Stream, alt. 1,045 ft. **Inje Kemer Tash**, a sculptured rock  $\frac{1}{2}$  mile to l.

42 $\frac{3}{4}$  Cross to r. bank of river by the **Kairli Köprü**, an iron bridge, alt. 910 ft. **Mollah Osman Kahve** on the r. bank.

A track crosses the main route at this point. It runs from **Akche Tash** (about 6-7 miles to NE.), by **Eli Dag**, over the **Sarynj Alan** and past three emery mines to **Nebi Köi** (2 miles to E.), and crossing the bridge goes NW. across the hills, joining the track which runs from **Eski Hissar** N. to meet the present road near mile 22 $\frac{1}{4}$ .

miles

Road runs up the r. bank of the river at the foot of the hills.

43½ Stream, alt. 920 ft. The valley now opens out to an undulating plain of roughly triangular shape, with its apex towards the W. The river apparently now begins to be called the **Karaboia Chai**.

Road bends round to W., still skirting the hills.

45½ Alt. 970 ft. Road again bends S.

46¾ Cross a spur, alt. 1,045 ft. **Leina** (anc. **Lagina**) 2½ miles WSW. on the valley-slope opposite.

Road now again takes a general SE. direction.

48½ **Dibsis Deïrmen**, mill on the river to r. Alt. 1,000 ft.

49 Stream. A little farther on is **Kosanty Kahve**.

50¼ **Kahve**.

51¼ A spur here projects from the hills on the W., forming with those on the r. bank a pass called **Karaboia Boghaz**. Road ascends between the river and the hills on the l. through the pass and into the **Kamysh Ova**.

53 A road comes in on the r. from **Milas** (see Route 185, mile 17½). **Ahar Kōi**, large village on the slope ½ mile to l., alt. 1,210 ft. A road runs thence to **Karajasu** (see Route 193).

54¼ Cross the **Madalar Chai**, alt. 1,140 ft., a stream from the NE. **Madalar** village 1 mile upstream on the slope. Isolated hill ½ mile S. in the plain. **Eski Hissar** (anc. **Stratonikeia**) 5 miles W. on the hills across the valley.

55¾ **Kahve** on l., alt. 1,170 ft. **Boz Armud** village ½ mile to l. on a spur called **Kara Dagħ**. Dam on r. and a hill called **Assar Tepe** 1 mile farther SW. in the plain. Several villages to W. and SW. on the hills at the opposite side of the valley.

57 Alt. 1,225 ft. Mound called **Ter Tepe** on r.; to l. a well with very good drinking-water.

Cross the bridge over the **Alashehir Chai**, a copious

miles

stream from the E., which here bends S. to the river. **Yerli Köi** village 1 mile upstream on the l. bank at the foot of the hills.

58 Cross another stream from the W.

58½ **Alyrsa Kahve** on l.

59½ Stream from Bayr Köi village, 2 miles NE., alt. 1,280 ft.

60½ Stream.

60½ **Haranlı Kahve** on r. A track from Milas comes in on the r. (see Route 185, mile 28½). Stony ford across the river, here called the Ak Chai, alt. 1,275 ft. The iron bridge here was in ruins in 1907. Haranlı Bunar village to r. Due S. of the village is a pointed hill called Sivri Tepe.

Road now leaves the river.

61½ Begin to ascend the hills again, through forest. This pass seems to be called **Kara Kuyu Kapu**. The village of Kara Kuyu lies 2 miles SW. beyond the pointed hill above mentioned.

62½ **Merdiven Kahve** on l., alt. 1,520 ft.

62½ **Alacham Kahve** on l., alt. 1,660 ft. Road bends NE.

63½ Road begins to zigzag up the hill in an ESE. direction.

65 **Cham Keser Kahve**, alt. 1,775 ft. Road now crosses a basin in the hills.

65½ Alt. 1,815 ft.

66½ Reach the far edge of the basin and ascend for a short distance.

67½ Summit, alt. 1,825 ft. Mughla comes in sight.

67½ Alt. 1,770 ft. Road descends steeply to the plain of Mughla.

68½ **Sülükü Kahve** on r.

69½ Cross a stream.

70 **Mughla**, alt. 1,750 ft.

## ROUTE 179

AİDİN—MILAS, 52 miles

There are no recent details available for this route from the point where it leaves the Aïdin-Mughla chaussée. The stage up the plain of the Karpuzly Chai should be fit for wheels in dry weather, but there appears to be no made road, and the more hilly country between the Karpuzly Ova and the Milas plain is probably fit only for pack-transport.

Supplies should be fairly plentiful. Timber is plentiful on the hills, and there is probably sufficient water.

miles	
0	<b>Aïdin.</b> For the first $16\frac{3}{4}$ miles see Route 178.
$16\frac{3}{4}$	Present track branches to r. from the Aïdin-Mughla chaussée.
17	Cross the <b>China Chai</b> and continue SSE., skirting the hills on the r.
$20\frac{3}{4}$	Here the track apparently bends WSW. up the valley of the <b>Karpuzly Chai</b> , a large tributary of the China Chai. <b>Arab Hissar</b> $2\frac{1}{2}$ miles to S., a few huts on the slope above the river, the site of the ancient Alabanda, alt. 435 ft.
23	A track comes in on the l. from Gyrova via Arab Hissar. Route continues over sandy hills above the l. bank of the stream. After some distance it runs over bare plain, passing <b>Bille</b> village to r.
$29\frac{1}{2}$	<b>Karpuzly</b> , large village. Country still hilly.
$30\frac{1}{2}$	<b>Gördük Köi</b> to r. on the slope. Pass several spurs, on which are a large number of sarcophagi.
$31\frac{1}{2}$	<b>Demirji Dere Köi</b> 2 miles to r. on the slope. Many ancient ruins; olive cultivation.
32	Small lake in a depression to l. <b>Ooköi</b> village to r.

miles

- 34 **Kadykushasy** village to r. Oaks and olives; the valley here is covered with huge boulders.
- 36 Track ascends above the level of the olive cultivation; oak and pine forest begins. Track continues ascending and descending over rounded hills covered with luxuriant vegetation and pine forest and separated by level valleys. Farther on a small upland plain is crossed; direction here almost due S.
- 40½ **Beybunar** spring on l. A track from Gyrova comes in here on the l. (see Route 180, mile 20).
- 41 **Türbe**, Turkish village picturesquely situated among crags.  
Track again begins to ascend; only pines now on the heights. The country to E. between Gök Bel and Aksivri appears as a wide level plateau. To SW. the view extends to the peninsula of Budrum and the island of Kos.
- 43 Descent begins; after some distance the track runs between oaks, planes, and olives.
- 47 Enter a valley running S.
- 47½ **Kargyjak** village. Continue down the valley between picturesque cliffs past **Kyzylja**, a village on a spur.
- 49½ Enter the plain of Milas; track continues across the plain and crosses the marshy **Sary Chai**; breadth of stream 20–25 ft.
- 52 **Milas**.

## ROUTE 180

GYROVA—MILAS, 31½ miles

This route is fit only for pack-transport after the China valley plain is left (mile 6½). The country traversed is well wooded. Supplies are scanty from about mile 9 to mile 16, and water is probably scarce in summer.



miles

0      **Gyrova.** Track runs SW. across the plain ; maize, fig, and olive cultivation.

1½      **Karaman Köi.** Direction now SSW.

4¼      Cross the **China Chai** and turn SW. across the plain, following the course of a tributary ; no water in the stream-bed in June.

6¾      Kahve at the mouth of the valley in bare forehills, down which the tributary comes.<sup>1</sup>

Track ascends the valley, which here carries water. In places the stream disappears under granite boulders. It is spanned by a mediaeval bridge. The path followed here is an ancient pack-route to Mughla.

8½      The pack-route to Mughla turns S., following the valley.

Present route ascends SW. into the **Akche Ova**, a valley depression lying between the forehills and the Gök Bel mountain system. The depression is well watered, and the vegetation, especially timber, is luxuriant. Olives are grown.

9      **Mukhti Köi**, alt. 770 ft. Track now ascends W. through pine forest up fairly steep slopes.

10½      Cross a picturesque wooded valley with a waterfall and ascend over the ridge on the W. into the valley which separates the long ridge of Gök Bel, alt. 4,000 ft., on the E., from the Doghanısyz Dagħ, alt. 3,300 ft., on the W.

Track turns SW. up the valley. The valley is a broad depression, with no plain at the bottom, however. The fall is not steep, and the valley-sides rise to the mountain-walls in terraces.

14      Summit, alt. 2,745 ft. This col lies W. of the valley. From a hillock near it a fine view is obtainable down into an extensive valley system draining S. to the plain of Milas. Beyond, on the S., rises a massive marble ridge with the summit of Aksivri.

Track descends through pine forest. The large

miles

depression followed by the road up the Karpuzly Ova to Milas is seen to W. (see Route 179).

16½ Spring of bad water. Direction becomes more westerly down a valley plain; rye cultivation in the valley, pine woods on either slope. Some distance on this valley opens into a wide plain.

20 **Beybunar** spring, alt. 1,590 ft., among meadows and trees. Here the present route joins the track from the Karpuzly Ova (see Route 179, mile 40½).

31½ **Milas**, alt. 185 ft.

## ROUTE 181

### MILAS—GEREME, 23½ miles

Except possibly for the first few miles this route is fit only for pack-transport. Supplies are scanty, and water is probably scarce in summer. Timber appears to be plentiful.

The distances given below are very uncertain.

0 **Milas**. Route follows the Kuluk chaussée (see Route 184) till the latter bends SW. up the hills.

3¼ **Bejen Kalesi**, small village and ancient ruins on a hill beside the track.

4 Reach the end of the plain of Milas. Track ascends through forest and scrub and then descends into a valley.

7½ **Ulash** village in the valley. Track now crosses wooded plain broken by hills.

10 **Chamköi**. Ascend over a hill on to a plateau. **Karaja Hissar** to r. Farther on a second ridge is crossed.

14 **Yeniköi** among vine, fig, and olive cultivation. Track runs S. over plateau.

17½ Descent through thick forest of oleanders and olives into the valley of the **Deirmen Su** and then up and down hill, generally through larch forest.

23½ Cross the **Kartal Dere** to **Gereme**.

## ROUTE 182

## GEREME--BUDRUM

*Via THE KAROVA, 40 miles*

This route is fit only for pack-transport, and the going is very bad in places, particularly over the first half of the route. In summer water is procurable only from the cisterns along the road. Timber is fairly plentiful, and there is a good deal of maquis.

miles

- |                |  |
|----------------|--|
| 0              | <b>Gereme</b> village, alt. 50 ft., on the site of the ancient Keramos; population mainly Moslem; picturesque ancient and mediaeval ruins. There is a landing-place about 1 mile SE. on Keramos Bay. |
|                | Track runs W. along the northern edge of the delta plain formed by the Kartal Dere.  |
| $\frac{1}{2}$  | Cross the <b>Kartal Dere</b> (dry in June).  |
| $1\frac{3}{4}$ | <b>Akardy</b> spring on r. at the mountain-foot. The spring is a strong one and forms a considerable marsh for about $\frac{1}{2}$ mile S. to the sea.   |
|                | Track now enters another cultivated delta plain.   |
| 3              | Cross the stream-bed (dry in June).  |
| $3\frac{1}{2}$ | Houses on r. Track leaves the delta plain and continues W. along the coast, which now falls steeply on the S. The small plains at the mouths of two unimportant torrent-beds are crossed.            |
| $6\frac{1}{2}$ | Track turns inland along the north side of a delta plain.  |
| 7              | Cistern on l. at the mouth of a valley. Track now ascends N. and then NW., crossing the valley.  |
| $8\frac{1}{2}$ | <b>Bozalan</b> , small village, alt. 715 ft.   |
|                | Track runs W., crossing the heads of several valleys; high bare limestone hills to r. It then winds SW., over a ridge, beyond which it descends a small valley.                                      |

miles

12 Track leaves the valley, which bends SE. forming a gorge, and continues SW. through fine maquis, crossing the head of another valley.

13 $\frac{1}{4}$  **Gökbel**, poor village of scattered huts, alt. 825 ft. ; maize and olive cultivation.

Track now bends NW. along the foot of the limestone mountain to r. across the heads of a number of valleys.

14 $\frac{1}{2}$  Summit of a ridge, alt. 1,245 ft. The country in front for a considerable distance is rolling plateau deeply cut by valleys running S.

The track is bad and little used. It crosses a valley and ascends to the plateau ; pine forest here.

15 $\frac{1}{2}$  **Masyn**, some shepherds' huts, alt. 1,330 ft., near a late Roman or mediaeval tower.

Track winds NW. over several small valleys ; pine forest gives place to luxuriant maquis.

18 $\frac{1}{2}$  **Baghchekuyu** cistern, alt. 955 ft., in a small plain ; cereal cultivation. A stream (dry in June) drains the plain northwards into the Karova. To SW. is a remarkable rounded hill dominating the plateau.

Track ascends NW. past a cistern. Crossing narrow belts of plateau it skirts two small round plains. Both of these are without surface drainage channels, and are cultivated with cereals.

19 $\frac{3}{4}$  General direction now N. View opens out of cultivated plains with numerous villages.

Track descends steeply into a broad valley.

22 $\frac{1}{4}$  **Yeni Köi** on the N. side of the valley.

23 $\frac{1}{4}$  Cross a small stream of good water to **Munjiler** village on a low spur above the Karova, alt. 305 ft. Track now turns SSW., crosses a stream draining NW. through the **Karova**, and ascends over a few hillocks which rise out of the plain. The plain is cultivated with cereals. Modern ruins and a pond are passed.

miles

- 25½ Track ascends a low limestone ridge and then crosses a recess of the plain.
- 26¾ Cistern. Track ascends wooded limestone hills.
- 27½ Col, alt. 970 ft. Track descends and crosses a valley, which widens to a plain lower down.
- 28½ Ascent begins again.
- 31 **Kosasarych** cistern and house. Track continues over ridges and the heads of valleys running S.
- 32 Summit, alt. 1,175 ft.
- 33 Cistern in a valley. Track ascends out of the valley ; the whole landscape is covered with maquis.
- 33½ Conical hill to l. with an ancient ring-wall.  
Track descends across another valley and ascends the next ridge.
- 34¾ Descent W. across a broad valley falling to the N. coast ; cultivation mainly of figs, and some houses here. Track then ascends over a hill, alt. 485 ft.
- 38½ Track joins Route 184 at the narrow col above Budrum.
- 40 **Budrum.**

## ROUTE 183

BUDRUM—FARILIA—KADYKALESİ—BUDRUM,

28½ miles

This road was unmetalled before the war and is probably fit only for pack-transport. Only small quantities of supplies are procurable. There is little timber on the hills, which are generally extremely bare, often naked rock. Most of the streams dry up in summer, and drinking-water is then to be found only in cisterns.

- 0 **Budrum.** Route runs W. across a col in a low ridge into a small plain cultivated with figs and olives.
- ½ Cross another ridge into a larger plain sloping S. to

miles

Petasa Bay; olives and cereal cultivation. Direction now NW.

2½ Cistern. Track enters a narrow valley in the hills. The ridge to E. is the Kara Dagħ.

4½ Reach the head of the valley near a second cistern. **Kirel Kõi** to r. Track ascends over a col; some pines on the slopes. Descent towards a broad valley depression draining E. to Göl Bay and N. to Farilia Bay.

7½ **Farilia** village in the valley.

Track now turns SW. not far from the coast. Ascent up a small valley on to a low uneven plateau and then descent between high laurel hedges into a small plain draining W. to Sandama Bay.

10 **Tremil** village in the plain among fig cultivation.

10¾ **Ashaghy Sandama**, small port beside a hillock. **Yokary Sandama** village ¾ mile to l.

Track now follows the steep coast.

12 Ancient ruins. **Gerich** village on a ridge to l.

Track bends inland over a ridge and descends to a bay, facing which are a number of ancient quarries. Direction then becomes S. over a hill, on the W. side of which are the ruins of Myndos, and descends again to a small plain in which are villas among orchards and cereal cultivation.

16 **Karakaya** village to l. The plain drains W. to Gümüşhli Liman and S. to Kadykalesi Bay. Between the two inlets is an isolated hill.

17½ **Kadykalesi Scala**. Track now turns E. and ascends a rounded hill behind the village, passing an abandoned mine; fragments of copper-carbonate, arsenopyrite, and manganese lie scattered about. Route then follows the S. slope of the hills above a coastal plain, passing through two small villages.

19½ Track now runs through low hills covered with pines, olives, fig-trees, and laurels.

miles	
22	<b>Kürechi</b> village. Track crosses a col, alt. 440 ft., and descends into a small plain, passing <b>Yaksy Köi</b> .
23½	Cross a stream which drains the plain S. <b>Episkopi</b> , Turkish village on the l. bank.
	Track ascends another ridge.
24¾	Summit. Descent into the plain which runs up from Petasa Bay.
27½	Rejoin the road followed on the outward journey.
28½	<b>Budrum</b> .

## ROUTE 184

## BUDRUM—MILAS, 31 miles

Except for the last 8½ miles this route is a horse-track. The first half of it seems to coincide with an ancient paved road. This stage is very monotonous, there being no habitations between Budrum and Göverjin Scala (mile 12½). Food-supplies and, in summer, water are lacking along this part of the route. From about mile 15 there is a good deal of cereal cultivation. Timber appears to be scanty throughout.

0'	<b>Budrum</b> . Track ascends NE. through olive groves, crossing two small valleys.
1½	Summit, alt. 375 ft. A track branches E. to Gereme (see Route 182). Present route descends ENE. down a small stream valley.
2¾	Valley opens into a main valley draining N. to Durvanda Bay. Track crosses the valley and ascends in a more northerly direction.
3½	Col, alt. 305 ft. Descent to <b>Durvanda Bay</b> and then NE. along the steep monotonous coast, crossing a number of small valleys.
6½	<b>Zeitunly Sarych</b> cistern. Track continues NE.
9	Ruins of Karyanda on a cape to l.
12½	Small plain with the houses of <b>Göverjin Scala</b> ; brackish spring.

miles

- Track ascends over a low ridge, leaving the coast. View to r. down into the plain of Karova.
- 15 Reach the edge of a broad cultivated plain stretching up from Tuzla Bay to the Karova. The bay is surrounded by marshes, and is shut off from the sea by a hilly peninsula, on which are the ruins of Bargylia.
- 15½ **Varvul Chiftlik** on a low hill to r.
- 16½ Cross a sluggish stream by a stone bridge.
- 17½ Track enters a side-valley. **Sirmach** village on r.
- 19 Track crosses the stream in the valley and ascends a broad flat ridge.
- 21 Summit, alt. 290 ft. Descent into the broad plain of Tekirambar.
- 22½ Cistern. Route now follows a chaussée which comes in on the l. from **Kuluk**, the small port of the kaza of Milas, situated on Asyn Kale Bay, about 6 miles to W.
- 23½ Cross a large stream draining W. through a long lagoon, formerly an arm of the sea, into Asyn Kale Bay. To l. is an isolated limestone hill with the village of **Tekirambar**. The plain is marshy in wet weather.
- 26½ Track ascends a side valley.
- 28 Summit, alt. 625 ft.
- 29 Road now runs NNE. straight across the plain of **Milas**.
- 31 **Milas**, alt. 185 ft.

## ROUTE 185

MILAS—MUGHLA, 37½ miles

There is a chaussée between Milas and Ahar Kõi, of which full details are not available. The route described below coincides with it from mile 5½ to mile 17½. The road from Ahar Kõi to Mughla is described in Route 178.

The country traversed between Milas and Mughla is well



wooded. A considerable part of the route lies over hills on which there are few villages and little cultivation. Supplies are scanty. Water is probably scarce in summer.

miles

- |    |   |
|----|---|
| 0  | <b>Milas</b> , alt. 185 ft. The chaussée follows the Kuluk road (see Route 184) for $1\frac{3}{4}$ mile and then turns E. Present route runs SE. across the sandy plain.  |
| 3  | <b>Kahve</b> . Track begins to ascend the hills beside a deep valley. Thick maquis and scattered pines on the steep slopes.   |
| 5½ | <b>Col</b> , alt. 1,595 ft., above the head of the deep valley just referred to. Track meets the chaussée and follows it E. Short descent into a round plain, the <b>Duz Ova</b> , which has no surface outlet for drainage; cultivation and scattered trees in the plain, forest on the surrounding slopes.  |
| 6½ | <b>Chiftlik</b> belonging in 1904 to a Greek called Rigopoulos. Road leaves the plain and ascends over a low rise into a fairly large valley draining W. to the plain of Milas. Ascent through pine forest.   |
| 8½ | <b>Beybunar</b> , large spring which drives a saw-mill, and from which part of the water-supply of Milas is drawn; alt. 1,655 ft.; kahve beside the road.<br>The valley rises gradually, opening out at one point; some fields here. The forest becomes thinner.  |
| 11 | <b>Summit and watershed</b> , alt. 2,330 ft. A track here branches to l. to an emery mine belonging to Messrs. Abbot & Whittall. The mine lies about $1\frac{1}{2}$ mile to N. high on the side of Aksivri.<br>Road descends into an easy valley running E.; pines on the slopes. The hills become rounded and are covered with maquis and pines, with cereal cultivation here and there. The ridge of Aksivri on the N. falls considerably in height; to S. rises the high plateau-like mass of Penjik Dagħ. The valley follows the northern foot of Penjik Dagħ, while the road runs along a kind of broad terrace, cut by side-ravines, on |

miles

the slopes falling from Aksivri. Many traces of emery are to be seen.

15½ Ascent over a low hill past a cistern among a few pines. Road then descends into the valley of Eski Hissar. The country in front slopes gently eastwards.

17½ **Eski Hissar** village, alt. 1,595 ft., on the site of the ancient Stratonikeia. The houses and garden-walls of the modern village are largely built of marble quarried from the ancient ruins.

The chaussée continues E. to join the road down the China Chai valley at Ahar Kõi (see Route 178, mile 53).

Present route follows a track which branches to r., skirting the foot of the hills into the China Chai plain.

22 **Bunarbashy**, large spring at the foot of a spur. Its overflow waters orchards.

The plain now contracts, a spur running down from the hills on the E.

23½ **Gümüş Kahve**, alt. 1,175 ft., beside the China Chai (dry in June at this point). Track crosses the stream-bed and runs SE. across the plain; single pines among cultivated fields.

28½ End of the plain and bridge over the stream. Here the present route joins the Aïdin-Mughla chaussée. For the rest of the journey see Route 178, miles 60½-70.

37½ **Mughla**, alt. 2,210 ft.

## ROUTE 186

GEREME—MUGHLA, 31 miles

There are two tracks between Gereme and Mughla. The one described here runs along the northern slopes of the Kiran Dagħ, and S. of the Kartal Dere, the gorge of which is in its lower part impassable. The other track crosses the river (? by

the Milas road, Route 181) to Yonaluk and runs thence, crossing the Marishal Dagħ, via Chivelik.

From Sarych (mile 14½) it is possible for foot-travellers to descend into the Kartal Dere valley by ladders of notched pine-trunks and to proceed thence via Baghyaka.

The country between the Kartal Dere and the N. slopes of Kiran Dagħ is a magnificent pine forest, feebly exploited by Greeks from Milas and Mughla.

The distances given below must be regarded as only roughly approximate.

miles

- |     |  |
|-----|--|
| 0   | <b>Gereme</b> , alt. 50 ft. Track runs SE.   |
| 1   | Landing-place on Keramo's Bay. Track turns NE. and ascends in zigzags.   |
| 2   | Summit, alt. 1,475 ft., marked by an ancient tower. Track descends E.  |
| 3   | Cross a valley; English lignite mine to l. The country now is partly cultivated; some olives.  |
| 5   | <b>Gultak</b> village, alt. 1,245 ft., on a spur from the limestone ridge to S.<br>Descend to a dry stream-bed and ascend again. Direction changes to NE.  |
| 7   | Enter a valley running N., alt. 835 ft. Many olive-trees. Track descends steeply NNE. down the valley.   |
| 8   | The valley opens into the Kartal Dere, which runs NW. Track turns E. up the valley of the <b>Sary Chai</b> , a tributary of the Kartal Dere; the stream is dry in summer. After about 1 mile it turns NNE. over hills wooded mainly with larches. Steep winding ascent. Fine views from the clearings over the sea. On the far side the hills fall to a plateau covered with oaks. |
| 11½ | Direction now E. by N. along the slopes above the <b>Sary Chai</b> .   |
| 14½ | <b>Sarych</b> village at the head of a steep ravine running N. to the Kartal Dere, alt. 2,270 ft. Maize cultivation. Track runs NE. up a small valley through fine forest. To l. is the steep limestone peak of Sivri Dagħ.  |

miles

- 16½ Summit of a ridge, alt. 2,615 ft. Descent into a deep narrow valley.
- 18¼ **Deniz Ovası** village, alt. 2,350 ft., in a small round plain draining N. through a ravine to the Kartal Dere. Route now crosses a plateau covered with larches and oaks.
- 20 Descent into a deep valley to a stream which the track follows ENE.
- 22½ The track leaves the stream and ascends to l.
- 23½ **Yerkessen**, large village at the western end of a cultivated plain; well below the village, alt. 2,095 ft. Small ancient fort here. Beyond the village the track runs NE. over level bare plateau.
- 25 Track crosses the head of a valley and then runs over a small round plain; cultivated fields separated by hedges.
- 27 **Tirmigi** village, alt. 2,125 ft., at the N. side of the plain. Track now turns E. for some distance and then N. down a valley into the Mughla plain.
- 31 **Mughla**, alt. 2,210 ft.

## ROUTE 187

## GIOVA—MUGHLA, 17 miles

Some work had been done towards making this a chaussée before 1907, but there is no more recent information available to show whether the road is now passable for wheels. In 1907 it was rough and difficult even for foot-passengers.

The district through which the route passes depends for its water-supply mainly on cisterns, which are usually roofed over.

- 0 **Giova** (Gök Abad), small port on a narrow inlet near the eastern end of the bay of the same name; a few shops and a spring of good water.

miles

- Road runs at first E. across a small plain.
- $\frac{1}{2}$  Reach the foot of the hills, alt. 60 ft. Road now winds through the foothills.
- $2\frac{1}{2}$  **Sahar Kahve** on r.
- $3\frac{1}{2}$  Direction changes to a general NW. direction. Winding ascent. The country is bare except for evergreen and deciduous scrub.
- $4\frac{1}{2}$  Summit, alt. 1,655 ft. Direction now N.
- 5 **Eski Kahve.** Direction changes to NE.
- $5\frac{1}{2}$  Foot of descent. Road now runs across a small plain, the **Kyzyl Aghach Ova**, watered by a stream which flows off down a gorge to the SE. This stream curves round through the hills, and before entering the sea E. of Giova waters the N. side of the fertile plain of Gök Abad.
- $5\frac{3}{4}$  Cross the stream. **Kyzyl Aghach Kahve** a little farther on to the r. A track branches to l. to Yenije Kõi (anc. Kyllandos) and Mughla.
- $6\frac{3}{4}$  Cross a ridge, alt. 1,575 ft.
- 7 Foot of descent. **Bakal Ieri Kahve.**
- $7\frac{1}{2}$  Sarcophagus on r. Road bends round to a general N. direction up a plain called **Kalavus Ova.**
- $8\frac{3}{4}$  Plain widens out. A stream which waters it disappears to E. in a gorge. It is apparently the same river as the Arablar Chai, which irrigates the S. side of the Gök Abad plain.
- Yenije Kõi** village, site of the ancient Kyllandos, 1 mile to W. on the hill.
- $10\frac{1}{2}$  Cross the stream mentioned under mile  $8\frac{3}{4}$ . A little farther on to the l. is **Ula Kahve**, alt. 1,695 ft. A track branches here to Ula and thence via Yüksekum to Makri (see Route 198, mile  $8\frac{1}{2}$ ).
- Road now begins to ascend in zigzags along the eastern slope of the stream valley.
- $11\frac{1}{4}$  Alt. 1,875 ft.
- $12\frac{1}{2}$  Summit, alt. 1,990 ft. **Gül Aghzy**, small village

miles

near a cistern to r. On the l. are the sources of the stream.

13½ Cistern on l., alt. 1,775 ft.

14 Foot of descent. Road now crosses the cultivated plain of Mughla; scattered houses of **Karabaghlar** among orchards on r.

14½ Track mentioned under mile 5½ comes in on l.

17 **Mughla**, alt. 1,750 ft.

## ROUTE 188

### GIOVA—MERMERIS, 19 miles

This road appears to have been metalled within the last few years. There is no evidence as to its present condition. Supplies are scarce except near Giova and Mermeris. There appears to be sufficient water from streams or springs, and timber is plentiful.

0 **Giova.** Route at first follows the Mughla chaussée E. along the foot of the hills.

1½ Road branches to r. from the chaussée. Brackish springs forming a small stream to r.; hill to l. with a large mediaeval castle, and near it a number of beehive huts.

Direction changes to S. across the plain.

4½ Cross a bridge over the marshy **Arablar Chai**, which, a little higher up, is fed by several springs; Akchebunar village on the l. bank. Ascent over a low ridge into a second plain, which joins the main plain to W.

5 Cross the stream in the plain. Daphni landing-place is visible on the shore 1½ mile W.

Road continues S. across the plain and ascends pine-covered hills.

6½ Col. The streams in front flow S. Road descends a valley SW. past springs; maize and corn cultivation.

miles

- 8½      **Khan and mill.** The valley narrows.
- 12      The valley bends SE. Road crosses the stream by a bridge and ascends gradually up a side-valley. To W. is a conical peak called Altynsivri. Farther S. the road ascends a pass.
- 16      Summit, alt. 795 ft. Pine forest now gives way to luxuriant maquis, chiefly myrtles.  
Road descends with rugged limestone hills to r.
- 17½      Reach a small plain.
- 18½      The river left at mile 12 comes in on the l. Road crosses and runs through gardens; many date-palms.
- 19      **Mermeris** (Gk. Marmaras).

## ROUTE 189

## MERMERIS—SARANTA BAY, 20½ miles

This is a difficult pack-route with many ascents and descents through hilly country. The track is slippery in many places, over rock worn smooth by long use. The country traversed is very thinly populated. In spite of the predominance of Greek place-names the bulk of the population is Turkish. There is a good deal of scrub and timber. Water is probably scarce in summer.

- 0      **Mermeris.** Track follows the shore SW.
- 2½      The hills now come close down to the water.  
Track follows the lower slopes.
- 4½      Cross the small valley of the **Gairachyk Chai.**
- 5      **Gulenie** village at the southern side of the valley.  
Track now ascends limestone hills beside a steep gorge.
- 7      Col. Track passes a few houses belonging to the district of Alexa and the spring of Kojabunar, alt. 980 ft. Farther on it runs through orchards past an ancient wall.

miles

- 8½ Col, alt. 1,665 ft. Descent through pine forest into a valley in which are some huts; prominent limestone peak to W. Track continues SW. over a number of small pine-clad ridges between valleys running SE. The valley-bottoms are cultivated, and some contain huts and wells.
- 11 Descent S. into a deep valley.
- 12½ **Bayr** village, alt. 590 ft., on a low spur in a small cultivated basin; strong spring under plane-trees; ancient sarcophagi and bases of columns.  
Track passes an ancient wall and ascends the S. side of the basin.
- 13½ Summit, alt. 1,225 ft. Track now runs SW., ascending and descending along the maquis-covered slopes of the mountains to r., and crossing the heads of several valleys which fall steeply to the coast on the E. Before long the sea becomes visible, with the island and town of Rhodes in the distance. Farther on the track turns inland over a pass into a long valley running SW.
- 17½ Descent into a valley opening SW. into Saranta Bay.
- 18½ **Sügüt** village, alt. 550 ft., on cultivated slopes on the S. side of the valley; strong spring.  
Track continues SW. along the slopes.
- 19½ Small limestone cone, with ruins, to r.
- 20½ **Saranta**, a few houses on the bay of the same name.

## ROUTE 190

DACHA—CAPE KRIO, 18 miles

This route is fit only for pack-transport. Supplies in small quantities are obtainable in the Dacha district and the plain of Yaka Kõi. Timber is fairly plentiful. Water is scarce in summer.



miles

0

**Dacha.** Dacha or Dadia is the name given to a group of villages at the western end of the coastal plain on Dacha Bay. The main village lies on the S. side of a broad well-wooded valley, on the N. side of which is **Eli** village, alt. 145 ft., the seat of a mudir. The population consists of Turks and a few Greek emigrants from Symi. Almonds are the chief local product. Locust and fig-trees are also common, and valonias and other nut-bearing trees are found round the villages. Apart from the trees the district is covered partly with scrub, partly with fields in which millet is the chief crop.

Track ascends the Dadia valley, passing **Batyr** village.

1

Reach the foot of the hills near an isolated limestone hill. Track ascends past a spring beneath a second isolated hill, the summit of which is surrounded by a ring-wall.

3

Steep rocky hill on l. with ruins. South of it the Dadia stream flows E. in a wild gorge.

4

Col. Track runs SW. along the slopes falling from the mountain on the r. towards the upper Dadia valley above the ravine.

5½

Second col, alt. 1,385 ft. Track now winds W. past the heads of several valleys running S. to Avlana Bay; several springs. For some distance the path runs beside a precipice.

7½

Third col. Track descends into a valley running W. The valley gradually widens to a narrow plain, in which are a number of villages.

10½

**Yaka Kõi.**

11¾

**Cheshme**, small village, alt. 255 ft. To l. the stream in the valley bends S. There is said to be a landing-place at the mouth.

Track continues W. The plain becomes narrow.

12½

**Jumaly Kõi.**

miles

- 13 **Yasyk Kõi.** A valley, in which are valonias, runs W. to Tekir Bay ; it is drained by a stream (dry in summer).

Route turns SW. up a side-valley, down which the upper reach of the stream comes ; ancient ruins to r, and l.

- 14 Col, alt. 520 ft. Track bends W.

- 18 Ruins of Knidos. Immediately in front is **Cape Krio**, a rocky peninsula about  $\frac{3}{4}$  mile long joined to the mainland by a low sandy isthmus. The southern side of the peninsula falls steeply, while the land side is rather easier. There is a spring above the isthmus on the land side.

## ROUTE 191

DACHA—MERMERIS,  $37\frac{1}{2}$  miles

This is a pack-route throughout and difficult in places. At some points along the shore it is necessary to wade through the water (see mile 23). Supplies are scanty, and water is scarce in summer. The country traversed was formerly well wooded but is now largely deforested.

- 0 **Dacha.** Track runs E.  
 $3\frac{1}{2}$  Landing-place on r. Track continues E. behind dunes.  
 6 Well.  
 7 Cistern. Track reaches the foot of the hills and ascends NE.  
 9 **Emejik**, alt. 390 ft., on the mountain-slopes ; fine trees. Ascent continues NE.  
 $9\frac{1}{2}$  Summit, alt. 600 ft. Track descends steeply to the north coast, which it now follows. Rounded hills

miles

with maquis and the remains of pine forest ; several springs.

11½ A stream valley which widens out to a small plain comes down on the r. The small village of **Alavara** lies up the valley.

Track crosses the plain and ascends over spurs to reach the coast again.

14½ Charcoal-burner's hut in a large valley. There is a small strip of coastal plain here. The hills now become lower, and the coast is broken by many small picturesque bays at the mouths of valleys. Fine pine forest and luxuriant maquis come right down to the water's edge.

19½ Track ascends on to the ridges. The peninsula now becomes still narrower, and the sea on both sides is visible from the track.

21 Narrowest point of the peninsula between **Murdubeg Bay** and **Benjik Bay**.

Track continues E. across broad valleys.

22 Well near a single tall pine, **Benjik Cham**, in a valley plain running down to Benjik Bay.

23 Track reaches the shore of **Erine Bay** and follows it E. In places it is necessary to wade through the water at the foot of cliffs ; gentle slopes to l. covered with maquis.

26 Enter the valley plain of the **Raena** stream. Track turns inland along the western edge of the plain. The shore is marshy.

28½ Mill on the Raena Chai. The stream carries water in summer. Track here crosses the main stream, which comes down a broad valley from the N. Higher up there is said to be a saw-mill from which logs are floated down to the sea. Route turns E. up the valley of a tributary called the **Erchesh Chai** (dry in summer).

31 Direction changes to NE. up the hill-slopes.

miles

- 32½ Summit of a hill, alt. 415 ft. Track descends across a valley running S.; stream in the valley. Ascent up the opposite slope.
- 34 Col, alt. 760 ft. Mermeris comes in sight. Fairly steep descent to the plain past **Armudalan** village.
- 37½ **Mermeris.**

## ROUTE 192

NAZLY—BOZDOGHAN—GYROVA, 35 miles

The first 16½ miles of this route are metalled. At Bozdoghan the chaussée ends, and the rest of the route is fit only for pack-transport. The first 4 or 5 miles beyond Bozdoghan are steep and difficult, though the road is regularly used for the transport of snow from the upper levels of the mountain. The rest of the track is less steep but still difficult.

Supplies are not obtainable beyond Bozdoghan, and from that point water also seems to be wanting in summer. Both the eastern and the western slopes of the mountain are well wooded with pines, while the upper levels are bare.

- 0 **Nazly**, alt. about 300 ft. Road runs S. across the valley plain.
- 2½ Cross the **Maeander**. Direction still S. across the plain to the valley of the Ak Chai.
- 7 Wooden bridge over the **Ak Chai**, here a strong muddy stream flowing with many windings near the W. side of the valley. A road comes in on the l. bank from Yenibazar on the S. side of the Maeander valley. The Ak Chai valley is largely cultivated with wheat, maize, and cotton. There are few trees. A number of small villages lie on the valley-slopes.
- 9½ Tumulus in the plain to l. The upper slopes of the hills to r. are covered with pines; otherwise the only vegetation is low scrub.

miles

- 11 The valley contracts to about  $\frac{1}{2}$  mile in width. Road ascends low spurs from the r.
- 16 Road turns W., winding up the hill-slopes above a ravine.
- 16 $\frac{1}{2}$  **Bozdoghan**, alt. 1,000 ft., head-quarters of a kaza ; population almost entirely Turkish. The houses are picturesquely situated along the ravine, down which comes a strong stream which drives several mills.  
A fine view is obtainable from here over the **Äk-Chai** valley and part of the Maeander valley.  
Road is now unmetalled and ascends the **Madaran Dag** by steep difficult zigzags, leaving to l. a summit on which are mediaeval ruins. Up to an altitude of about 2,000 ft. evergreen and deciduous oak scrub, with single olives, constitutes the chief vegetation. Higher up pine forest begins, and rye cultivation is found up to 3,600 ft.
- 20 Reach the ridge-level. Track turns S., ascending gradually. The mountain is now bare.
- 21 Alt. 5,600 ft. Direction still S.
- 21 $\frac{1}{2}$  Direction changes to W. The highest summit of the broad ridge of **Madaran Dag** is a bare peak immediately to S. rising to a height of about 6,000 ft. A few abandoned huts lie on its slopes.  
From this point the upper levels of **Madaran Dag** are seen as a broad undulating plateau cut by a large valley running SW. Large numbers of **Yürük** tents may be seen in summer.
- 22 $\frac{1}{2}$  Saddle, alt. 5,100 ft. Track continues W. up the western summit of the mountain.
- 24 Highest point, alt. 5,770 ft. Track descends SW. to another saddle and continues in that direction along an undulating ridge.
- 28 $\frac{1}{2}$  Track now descends W. ; view down into the **China** valley with its numerous villages. This western

miles

slope is easier than that above the Ak Chai valley. Like the eastern side it is wooded with pines. It is broken by a valley running N. ·

35 **Gyrova**, alt. 335 ft.

## ROUTE 193

**AHAR KÖI—KARAJASU**, 43 miles

This route is a horse-track throughout and difficult in a good many places. Supplies are scanty for the first 25 miles or so but from that point are more plentiful except on the stage over the Karynjaly Dagħ (mile 38). There is a good deal of timber along most of the route, and also, apparently, sufficient water.

- 0 **Ahar Köi**, alt. 1,300 ft. Track ascends gently NE. up the hill-slopes.
- 1½ Cross a small cultivated plain; no outlet for drainage.
- 3½ Col. The country in front is undulating plateau with a gentle rise towards the E.; cultivated fields and single pines with a considerable amount of evergreen oak scrub.
- 4½ **Kavak** village to r.
- 5 **Kahve**, alt. 1,950 ft. Track now ascends, crossing many small valleys, along slopes falling to r.; continuous pine forest.
- 9 Spring on r.
- 9½ Summit, alt. 3,200 ft. The **Eli Dagħ** rises a short distance to S. There are a few emery mines on it.  
Track descends into a valley between rounded hills. The landscape is very monotonous. There is only one village visible, **Kavakdere**, high on the slopes in front.  
The bare limestone ridge of **Gök Tepe**, alt. over

miles

- 6,200 ft., is seen to S. There are traces of emery in the valley. Some cereal cultivation is carried on.
- 13 The valley joins a larger one from the S. with a strong stream. The slopes now are fertile, with fine trees, especially walnut and olive.
- 15½ **Mesevle**, alt. 2,400 ft., about 300 ft. above the river. Track turns E. across the valley.
- 16¼ Village, also called Mesevle, with a large house belonging to the Alibey; alt. 2,110 ft.  
A track here branches N. to Bozdoghan.  
Present route turns SE. up the eastern slopes, crossing many small side-valleys.
- 17½ Direction changes to E.; some cereal cultivation.
- 19 Track now follows a fairly large valley through pine forest.
- 19½ **Gunduz**, small village. Track continues through pine forest.
- 21 **Olajak Gedik** pass, alt. 3,530 ft. In front is a plateau drained by deep valleys running S. **Guialan** village lies on this plateau, and behind it rises the Buba Dagħ. In the background the great plateau of Davas is visible, with high mountains behind it. To S. there is a view over the mountains round Balania to the snow-capped Sandras Dagħ in the distance.
- 21½ Cross a valley; Yürük tents here in 1904. Track ascends over a col.
- 23½ **Kara Gedik** pass, alt. 3,615 ft. This is the watershed between the valleys running S. and the Deli Chai system, which falls E. to the Ak Chai. The summits of Karynjaly Dagħ are now seen to NE. rising above the table-land of the Ak Chai.  
Track descends steeply NE.
- 24½ **Kara Gedik** village, alt. 2,800 ft., on a cultivated terrace above the deeply cut valley of the Deli Chai. South of it rises the Buba Dagħ.

miles

- Track now descends gradually through pine forest.
- 26½ Abandoned emery mine to r. on the Buba Dagħ.
- 27½ **Körteke** mill beside the **Deli Chai**. The village of **Körteke** lies farther E. down the river valley, which in that direction contracts; broad cultivated slopes with many cultivated trees including olive.
- Track fords the stream and ascends NE., leaving the scattered houses of **Güneje** to l.
- 29 Col, alt. 1,460 ft. Track descends a steep-sided gorge; high steep rocky wall to l.
- 30¼ Emerge from the gorge and turn more to the E. down cultivated slopes.
- 31½ **Kemer**, scattered village, alt. 820 ft., in the valley of the **Ak Chai** and about 150 ft. above the river; extensive cereal cultivation. The valley at this point is broad. Upstream the river comes through a gorge, and downstream also it forms a canyon.
- 32 Ford the **Ak Chai**; alt. 645 ft. The stream is liable to sudden rises during rain.
- Track ascends N. through cultivation.
- 32½ **Akyaka** village.
- 33 Spring on r. A little farther on there are ancient ruins and many caves in the limestone slopes.
- Track ascends a small valley.
- 34 Reach the edge of the level plateau of **Yolaltı Narly**, alt. 2,360 ft.; cereal cultivation and valonias. Direction still N.
- 36 **İlmeligöl**, **Yürük** village. Track ascends gradually towards the mountain-foot.
- 38 Ascent begins up the **Karynjaly Dagħ**; alt. 3,085 ft.
- 39 Summit, alt. 4,000 ft.; slopes easy and covered with pines and evergreen oaks. Steep winding descent down a ravine. In front is the broad basin of the **Dandala Su**. The slopes beside the track are well watered and finely clothed with trees (including



- miles | fig and olive) and cereal cultivation. Lower down a large patch of barren ground is crossed.
- 43      **Karajasu**, alt. 1,730 ft., fair-sized place and headquarters of a kaza. It lies on both sides of a deep gorge running E. to the Dandala Su. It has a busy bazar.

## ROUTE 194

NAZLY—YERENGÜME, 55½ miles

This is a fairly easy pack-route through well-wooded hill-country. Supplies in small quantities should be procurable throughout. Most of the streams over the last stages appear to dry up in summer, but there are apparently a fair number of springs.

- 0      **Nazly**. For the first 8 miles see Route 157.
- 8      Present route bends to r. from the road to Seraï Kõi and runs SE. across the railway.
- 8½      Cross the **Maeander** by a (? wooden) bridge about 70 paces long; alt. 260 ft. Track continues SE., at first through cultivation and cattle-pasture and then across a sandy arid tract past a spring among trees. The mountains on the S. are wooded.
- 11½      Track reaches the foot of the hills and begins to ascend along the W. side of the **Dandala Su** valley.
- 14      **Ali Agha Chiftlik** village, alt. 395 ft., among fine gardens. To NE. on the E. side of the river is a bare hill with the ruins of the ancient city of Antiocheia.
- Track continues SE., ascending and descending along the W. side of the valley through low scrub and across pasture-land. Many small streams run down to the Dandala Su, the banks of which are thickly wooded. On the r. the mountains are wooded to their summits; those to E. are lower and

miles

rather bare. The valley-floor is formed of large undulations, through which the river has cut a deep bed. At intervals high and precipitous cliffs overhang the stream.

17 **Yenije** village on a hill beside the river; strong spring of excellent water.

19½ Cross a large stream from the r. by a bridge of massive construction; deep bed between bush-covered banks.

21 **Kahve**. Some distance farther there is a steep rocky ascent over a ridge, beyond which the track continues over deep gullies.

24 A track bends to r. to **Karajasu** 2 miles SSW.

Present route continues up the valley.

25½ Cross the river by the **Dandala Köprü**. Track ascends and descends over ridges and gullies. The country traversed appears to be chalky and barren.

27½ Track bends E. into the upper basin of the river. The country here is a broad plateau with some cultivation and a few trees.

33 **Gere** village, alt. 1,800 ft.; vine, opium, and tobacco cultivation. Close to the village are the extensive ruins of **Aphrodisias**. The river is now called **Gere Chai**.

Track ascends gradually near the foot of the mountains on the l., crossing deep watercourses (dry in summer).

37½ **Seköi**; maize cultivation and valonias. The plateau here narrows. Direction now SE. through low thorny scrub.

40 Cross the river (dry in July). Fairly easy stony ascent up a side-valley. This pass is called **Cham Beli** (or **Korgoz Beli**).

42½ Summit, alt. 3,625 ft. Near the summit is a large cairn close to a tomb. An extensive view is now obtained of the country in front. On the l. the

miles

lower slopes of the Buba Dagħ are thickly covered with forest. The upper slopes are bare, and the summit is covered with snow. To E. and S., far below, is the fertile plain of Davas. Far to the S. the snow-clad mass of Ak Dagħ in Lycia can be seen, and more to the r. other snowy ridges, parts of the chain above Mughla.

Track descends and crosses a valley running S. to the Yenidere, a tributary of the Ak Chai.

46½      Cross a small stream flowing in a bed over 30 ft. deep, alt. 3,030 ft.; red soil, well cultivated, with an abundance of fruit and forest trees.

Road now good, between hedges or walls of mud brick across the **Davas Ovasy**; corn, maize, and opium cultivation, with valonias and wild pear trees, from here to Yerengüme.

49      **Karahissar** village built round a large market-square; vine cultivation with walnut and fruit-trees.

51      **Vakuf** village to l.; spring, and ruins of Trapezopolis.

52½      **Kyzyljabölük**, large and prosperous village; vine cultivation.

55½      **Yerengüme**, alt. 3,130 ft., head-quarters of a kaza. The houses lie close together at the southern foot of an outlier of the baré limestone hills which here close the north-western corner of the plain. There are irrigated gardens at the mouth of a ravine.

## ROUTE 195

### NAZLY—DENIZLI

*Via BURKHANIE, 53½ miles*

This is an unmetalled road throughout. The stage to Kabach (mile 24½) is of course fit for wheels in dry weather, and the hill country between that place and Denizli does

not appear to be specially difficult, but the road is probably used only for pack-traffic.

Supplies are plentiful, and the hills from Kabach to Denizli are fairly well wooded. Water is procurable at short intervals throughout.

miles

- 0 **Nazly.** For the first  $22\frac{1}{2}$  miles see Route 157.
- $22\frac{1}{2}$  **Burkhanie** railway station. Track turns S. across the railway.
- $23\frac{1}{4}$  Cross the **Maeander** by a wooden bridge, alt. 425 ft., and turn E. for some distance skirting the hills and then up a valley.
- $24\frac{1}{2}$  **Kabach** village; olive cultivation. Track ascends in a general southerly direction up a high slope.
- $26\frac{3}{4}$  **Tekke** village.
- $28\frac{1}{2}$  **Kirkas** village, alt. 2,030 ft., on a cultivated terrace. The mountain behind is wooded with firs. Track ascends to about 2,600 ft. and then runs SSE. over a mountain terrace, on which are corn-fields and valonia oaks. Beyond this it descends steeply through fir woods into a deep valley.
- $32\frac{1}{4}$  Mill in the valley, alt. 2,010 ft., on a brook from the SW. Track ascends to a height of 2,630 ft., from which Kady Köi can be seen to SE.
- $34\frac{3}{4}$  **Assar** village, alt. 2,375 ft., possibly the site of the ancient Attouda, on a small ridge; mediaeval ruins close to N. on a conical hill. Track descends into a valley and then ascends over a broad ridge.
- $35\frac{1}{2}$  **Injirbunar** village. To r. the high mountain terrace (see mile  $28\frac{1}{2}$ ); to l. a plateau, broken by valleys, which slopes gently to N. Farther E. are two broad level terraces, separated by a well-defined scarp, which descend in steps towards the N., and under the lower of the terraces stretches rolling hill country towards the Maeander plain.

miles

Track descends into a deep ravine with steep sides in which two streams unite, alt. 1,410 ft. The western stream is of bluish-white water and is said to come from a sulphur spring. Track then ascends a ridge on which lies the village of **Akhyrly**; extensive cultivation here, mainly of cereals. The mountain to S., alt. about 5,900 ft., is bare or only sparsely wooded. Then follows another descent into a valley and the ascent up the opposite slope.

38

**Kady Köi**, large market town, alt. 2,300 ft., headquarters of a nahie under Seral Köi; pop. 10,000–15,000; about 2,500 houses, some of considerable size, built close together one above another on the flanks and summit of a small uneven ridge. The streets are extremely narrow. There is a large and much-frequented bazar. The place is well supplied with water, which is brought in channels through the town from the ravines in the mountain. The chief occupations of the inhabitants are weaving and the dyeing of cotton.

Track continues across a series of valleys and ridges.

38½

**Yeni Köi** on the first ridge.

40½

Track now crosses the valley of the **Küçük Kara Arslan**, which comes from a high steep peak to S. (Beshik Kaya on the maps, alt. about 7,600 ft.), probably the highest summit of the Buba Dag; patches of snow on it in the end of June. Another lower peak lies farther E.

Track now crosses several small valleys separated by broad flat ridges cultivated with vines.

44

Cross the large valley of the **Büyük Kara Arslan**, alt. 2,100 ft. The valley here is bare; lower down it widens out and is cultivated.

Ascend the E. side of the valley and come in sight of Denizli. The track runs SE. at the foot of the mountain.

miles	
46	<b>Gyoveshlik</b> village; vine and tobacco cultivation. Leave the foot of the mountain and descend gradually E., passing <b>Takmak</b> village to l. and <b>Berketler</b> to r.; thick clumps of trees with abundant water at the mouths of the ravines in the mountain; cereal and pasture-land on the outliers.
51	Cross a small valley with springs and gardens.
52½	Track meets that from Nazly via Seraï Köi (see Routes 157 and 166).
	Cross the <b>Gümüş Chai</b> .
53½	<b>Denizli</b> , alt. 1,310 ft.

## ROUTE 196

## MUGHLA—DENIZLI, 64 miles

From Mughla to Yerengüme (mile 46½) this route is a horse-track, steep and difficult in places. From Yerengüme there is a chaussée, of which no details are available, leading over a pass in the eastern end of Buba Dagħ to Denizli. The route indicated in the itinerary partly follows the line of the old road which crosses the slightly higher Bedra pass farther to the E.

There are few supplies except in the plain of Davas. Fuel is plentiful, but water is scarce in summer.

0	<b>Mughla</b> , alt. 2,210 ft. Track ascends steeply up the mountain-side and then crosses larch-covered plateau.
3¾	<b>Khan</b> , alt. 3,870 ft. Direction still NE., up a narrow stream valley.
5	Summit, alt. 4,995 ft., and watershed between the Mughla basin and the Ak Chai; pine forest on the slopes. Descent down a ravine. Direction changes to E. across plateau.
7½	Alt. 3,795 ft.

miles

- 9½ **Yemisen Kahve** and guard-house lying high above a side-valley of the **Möndeve Chai**; alt. 3,345 ft.  
**Yemisen** village. Gentle descent across a valley through pine forest and then down a slope between two side-valleys.
- 12½ **Dip Khan** in the valley of the **Möndeve Chai**. Track descends the valley NE.; broad stream-bed, with many boulders; little water in May; cultivation and some houses in the valley-bottom.
- 15 **Yeni Khan**. Track crosses the stream. Oleanders in the valley and some rice cultivation.
- 17 Track turns E. and ascends out of the valley.
- 18 **Solutluk** (or **Pian**) **Kahve**, alt. 2,070 ft.
- 19 Col, alt. 2,215 ft. Track descends fairly steeply down the stream valley of the **Kuru Dere** in a general NE. direction.
- 23 **Kahve**. About here a track branches to r. up the **Ak Chai** valley (see Route 200).
- 23½ **Irmak Köprü**, wooden bridge (in ruins in 1904). Cross the broad shallow bed of the **Ak Chai**, a stream from the SE. Track ascends the valley of a tributary from the NE.; stream dry in the beginning of June; irrigated maize-fields and a few houses.
- 27½ Cross the stream-bed and ascend N. out of the valley on to a ridge between two side-valleys.
- 31 Direction changes to NE. round the head of the valley to which the **Chapas Dag** falls on the S. and W.
- 33½ Bridge, alt. 3,110 ft., over a deep ravine to **Davas Dag**, an isolated hill. Ascent up the steep boulder-covered SW. slope.
- 34 **Davas** village on the plateau at the top of the hill, alt. (at the khan beside the bazar) 3,575 ft. At the highest point, on the N., are small barracks. The place is the head-quarters of a *nahie*. Many ancient ruins.
- Descent in a northerly direction over the bridge

miles

which spans the steep gorge on the N. side of the hill. A track branches to l. (see Route 197). Present route runs NE. over plain covered with sesame cultivation. Track follows the line of an ancient paved road past several ancient wells.

37½ **Kirkas**, large village, with a bazar, at the foot of the mountains, which here run from SW. to NE., and a little farther to N. recede eastwards.

Track first skirts the hills and then strikes NE. across a broad valley plain from the E.

40½ **Solmas** village to r. Beyond are high wooded hills ; some snow on the summit in the beginning of June.

Track continues over fertile plain.

42 Stone dam over a sluggish marshy stream ; cereal and opium cultivation, with single trees, especially wild pears, among the fields.

42½ Wells.

44 Cistern on r.

46½ **Yerengüme**, large village, alt. 3,130 ft., head-quarters of a kaza.

From Yerengüme there is a chaussée running almost due N. to Denizli over a pass about 3,570 ft. high. The old road which is followed from mile 56½ below runs NNE. to a pass a few miles E. of that crossed by the chaussée.

Present route apparently runs N. by E.

53 **Sarova Yaila**. There appears to be no definite track for the next few miles. The route here taken follows a deep ravine leading to the foot of the mountain, ascending steeply through a thick forest of pine and oak.

54½ Summit. To r. in the direction of Khonas Dagħ is a deep amphitheatre of wood and pasture, with occasional patches of cultivation.



miles

56½

Track descends steeply through scrub and pines.

**Bedra Kahve** on a level patch of ground beside a stream; high cliffs on both sides.

The old main road, which also passes the kahve, is now followed. A few hundred yards farther on the most difficult part of the pass begins. The road is bad and runs in places along the edge of precipices 800 or 900 ft. deep. The mountains rise steeply on either side, and many large caves are to be seen in the face of the rock. The only signs of habitation are a few Yürük tents high up on the grassy slopes. Along the torrent-bed are fine walnut-trees.

64

The descent to the plain is by steep rocky zigzags.  
**Denizli**, alt. 1,310 ft.

## ROUTE 197

KALE DAVAS—MUGHLA, 41½ miles

This route is a horse-track throughout. Supplies are obtainable in small quantities for the first half of the route. Beyond Balania the country is sparsely inhabited, the population consisting mainly of shepherds. Timber is abundant throughout, and water should be procurable at short intervals even in summer.

°0

**Kale Davas**, alt. 3,620 ft. Track descends the N. side of the hill.

Bridge over the ravine. The road to Yerengüme and Denizli continues NE.

Present route turns to l., round the N. flanks of Chapas Dag. Some distance on a view suddenly opens down into the large valley of the Teina Dere, which runs W. The valley is partly cultivated.

**Teina** village in the valley to l. Track ascends on

miles

to a plateau covered with evergreen oak scrub, which separates the Teina Dere from the Deli Chai system to N. The sides of the latter are steep.

- 6 Cistern, alt. 3,205 ft. To N. a large valley joins that of the Deli Chai.

Direction now W. Some distance on the track descends into the Deli Chai valley; scattered pines on the slopes.

- 8½ Cross the **Deli Chai** just above the point where it is joined by the Teina Dere. The valley of the latter carries no water in summer, whereas the Deli Chai is a strong stream but comes down a narrow valley.

Track now follows the valley W. The stream is called Deli Chai.

- 9½ A stream called the Menavgat Chai comes in on the l.

- 12½ Track ascends out of the valley up the l.-hand slopes on to a low terrace and then on to a second higher terrace. Both terraces are cultivated and broken by numerous side-ravines.

- 13½ **Karakaya**, alt. 1,725 ft., a few scattered houses on the second terrace.

Direction now SW. along the terrace into the valley of the Ak Chai. The descent is steep for part of the way. Pines alternate with scattered cultivation.

- 15 Ford the **Ak Chai**, alt. 920 ft.; some wild olives here. Track ascends the ridge between the Ak Chai and Perdik Chai.

- 17 Summit, alt. 1,495 ft. **Perdik** village lies to r. in the Perdik Chai valley. Track now turns up the latter, along easy slopes crossing many side-ravines; scattered cultivation all round; maize-fields in the valley.

- 21 **Balania** village on a terrace at a height of 1,585 ft.; many gardens; tobacco and some olive cultivation. Two other villages of the same name lie on the opposite (N.) side of the valley. Between them is an isolated rocky summit crowned with ancient ruins.

miles

Track continues SW. along the slopes, ascending gradually through pine forest. Some distance on the valley narrows, and the path reaches a kind of terrace, across which it runs fairly well on the level. View W. into the Kinik Chai valley system with broad cultivated terraces. Track bends round into a valley from the S.

24½ **Chavdar**, a few scattered houses ; some cultivation.

25½ Cross the stream in the valley and ascend the western slope.

26½ Spring on l. The hills up the valley to S. are high and wooded.

Track ascends W. on to a plateau wooded with pines.

28 **Dorüngüme**, alt. 3,400 ft., large farm among maize-fields (owned by a Greek family in 1904).

Track continues over gravelly limestone plateau and then ascends gradually through fine pine woods into a broad basin among high hills. The basin is open to the E. A few Yürük tents may be seen among the trees.

31 Track ascends gradually up the southern mountain-slopes in a westerly direction.

31½ Direction changes to SW. up a small valley ; high bare mountain to W.

32½ Summit and watershed between the Ak Chai system and the Mughla basin ; alt. 5,610 ft.

Track descends SW. along the mountain-slope, crossing several watercourses into a valley draining W. to the China Chai. To E. a broad plateau slopes S. from the ridge of the watershed, and behind it to S. rise the steep walls of Üyüklü Tepe.

36 Track turns S. and, ascending out of the valley, crosses a limestone plateau ; alt. about 4,000 ft. Then follows a descent to a wide level scrub-covered plateau. A quantity of iron ore with traces of emery is to be seen on the descent. The plateau is sur-

miles

rounded on NW. and E. by high mountains, and is cut by deep canyon-like ravines. The only signs of habitation are a few shepherds' huts.

40½ Descent from the plateau down a spur between two ravines.

41½ **Mughla**, alt. 2,210 ft.

## ROUTE 198

### MUGHLA—MAKRI

*Via YÜKSEKKUM*, 77 miles

Except for the first 6½ miles this route is a horse-track. The country traversed is finely wooded. Supplies are scanty except where the country opens out, e.g. in the valley of the Namnam Chai or the delta of the Dalaman Chai.

The low-lying districts crossed by the route are infested by mosquitoes in summer.

- |     |  |
|-----|--|
| 0   | <b>Mughla</b> , alt. 2,210 ft. For the first 6½ miles see Route 187 in the reverse direction (miles 17–10½).   |
| 6½  | Here the present route branches E. from the chaussée to Giova.   |
| 8½  | <b>Ula</b> , large village and head-quarters of a nahie, to r. among trees.  |
|     | Track runs SE. through fine wooded hill country.   |
| 15½ | Emerge on to a plain in which lies the scattered village of <b>Hajiles</b> . Direction still SE.   |
| 17  | Cross the swift and deep <b>Namnam Chai</b> . Continue through mountain country with the river to r.   |
| 23  | Reach the valley of the Namnam Chai again and continue SE. over easy hills and through marshy plain broken by many streams. The hills to N. and NE. are well wooded. |
| 29  | A track from Mermeris (Route 199) joins on r.  |

K K 2

miles

30½

Stone bridge over a stream which enters the **Köijigez Göl** ½ mile to r. Track continues E. through thick marsh jungle.

32

**Yüksekkum**, alt. about 40 ft., flourishing township and head-quarters of a kaza, with a bazar and a harbour used by boats engaged in the timber trade. The lake was no doubt formerly an arm of the sea, with which it is now connected by an outlet stream navigable by kaïks.

Track turns NNE. for some distance and then SSE. over plain, crossing several streams which run to the lake. Some olive cultivation.

36½

Cross a low ridge and then continue over cultivated plain watered by the two branches of the **Yuvarlar Chai**.

39

Ascend a spur wooded with scattered pines.

40½

Summit, alt. 550 ft. Descend and cross a stream valley, passing several small chromite mines, and then down the valley past a spring.

44½

Track now skirts the hills which bound the lower valley of the **Dalaman Chai** on the NE.

45

Large chiftlik on l. with gardens. The plain is largely under pasture.

45½

**Ortaja**, small village consisting of a few kahves, shops, and a mill.

47

**Chaibashy**, small village.

48

Cross the **Dalaman Chai**. The river here flows in several arms in a broad gravel bed. The water is white in colour; kahve and mill on the l. bank. Several villages in the plain.

50½

Gentle ascent.

51½

**Deirmen Yakasy**, Greek village on the slope, along which the track runs; a number of mills driven by strong springs.

53½

Cross a col, alt. 675 ft., and a stream valley. Ascent continues.

miles

- 55 **Kyzylbel** summit, alt. 1,055 ft. Descend a stream valley E.
- 57½ The track reaches the coast and runs along it across a small plain.
- 58½ **Köijik Scala.** Köijik village 1 mile to N.  
The track ascends over a col into a fertile marshy valley and turns NE. up the valley past a spring.
- 62 **Iniye** village on l. on a strong stream.
- 63 Cross a col, alt. 495 ft. ; pine forest and fine maquis, with many liquidambar trees.  
Descend SSE., crossing several stream valleys.
- 67½ Bridge over the **Nif Chai** ; houses of Kargy district to l. Track now runs SE. over low rounded spurs, well wooded, running NE. and SW. ; several streams ; sesame cultivation in the valley plains.
- 73½ **Günlik Bashy** village on r. Direction now S. across the plain of Makri.
- 77 **Makri.**

## ROUTE 199

MERMERIS—YÜKSEKKUM, 34½ miles

This is a pack-route through country formerly clothed with magnificent forest, which is now partly destroyed. The path is difficult in many places, over slippery rock. The small valleys crossed open at the coast into small gravel-covered plains with a jungle-enclosed strip of marsh along the beach. Where these plains are drained by streams the latter are deep and very sluggish, often necessitating a *détour* to find a crossing.

Supplies are practically unobtainable *en route*.

- 0 **Mermeris.** Track follows the steep coast on the E. side of the bay, crossing the mouth of a stream (dry in summer).
- 2½ Direction now E., first round a spur and then inland

miles

along the N. side of a small valley plain. Beyond this the track ascends the hills.

5½ Col, alt. 585 ft. Descent to a similar valley plain running to **Karaghach Bay**.

7½ Track turns N. over a cape jutting into the bay and reaches a third plain. Here it turns E., and crossing a stream-bed in the plain (dry in summer) again ascends over a cape.

9½ Direction now NNE., ascending and descending along the steep coast.

10½ Descent into a broad level plain; stream dry in summer.

11 Shepherd's hut beside a spring on the E. side of the plain. Track winds NNE. up the slopes.

12½ Col, alt. 640 ft. Descent to a small plain along the most northerly extension of **Karaghach Bay**. The plain is drained by a plentiful stream from the N. On the E. side is a marshy strip between the shore and the hills.

14½ Fine spring of cold water in the bed of a stream which is dry in summer; group of houses at the S. side of the plain called **Büyük Karaghach**; the place is a small port for shipping timber.

Track now runs E. up a large valley plain. A track comes in from an abandoned (? chromite) mine on the N. side of the mountain ridge to l.

17 The valley narrows, and the track ascends the l.-hand slopes.

19½ In the next mile the track crosses the heads of three valleys, which unite to form the main valley left at mile 17.

20½ Col, alt. 1,460 ft. Track runs through thick forest, following a ravine which falls steeply NE. to the **Köijigez Lake**.

22½ Reach the small plain where the gorge opens to the lake; a little cultivation.

miles

23½

**Küchük Karaghach**, alt. 70 ft., scattered settlement abandoned in summer.

Track runs N. across the plain and then winds northwards up and down through pine forest along the steep western shore of the lake.

26½

Col, alt. 730 ft. Track descends to the broad plain at the N. side of the lake. Along the western end of the plain flows the **Namnam Chai**, a strong stream flowing through luxuriant marsh vegetation (the liquidambar tree was noticed here in 1904). Track ascends the stream for some distance, then crosses and winds NE. across the plain through scrub and occasional cultivation.

31½

Join the road from Mughla to Yükksekum (see Route 198, miles 29–32).

34½

**Yükksekum**.

## ROUTE 200

### MUGHLA—MAKRI

#### *Via* THE ESKERE CHUKURU OVASY

This route can hardly be regarded as an alternative to that via Yükksekum, but is interesting as leading through country that is very little known into the middle valley of the Dalaman Chai. Between Mughla and the cemetery (*mezarlyk*) of Gerdli (see next paragraph) there are alternative tracks. The shorter route, of which no description is available, is said to reach the cemetery in 10 hrs., but probably does not touch a single village. The other lies farther to the N., following the Denizli road (see Route 196) for about 23 miles. It then turns SE. and ascends the valley of the Ak Chai for some distance, after which it bends E. across the valley and up the slope of a side-valley. At about 3½ miles from the Denizli road the direction again becomes SE. The ascent is steep at



first, then easier, to the summit, alt. 3,575 ft. (total distance here about 30 miles). From here an extensive view of the surrounding country is to be had. To N. and NW. the general structure of the country may be seen as far as the mountains which bound the Maeander valley on the S. Most of the country is wooded.

From the summit the track descends, crossing side-valleys (apparently past a spring), to the cemetery of Gerdli, where the shorter track from Mughla comes in on the r. From here it continues along the **Eskere Chukuru Ovasy**, a plain about 4 miles long crossed from the N. by small streams which unite to flow W. along its S. edge as the Ak Chai. On the S. the plain is bounded by the Sandras Dagħ, whose northern slopes rise in gentle undulations and are less thickly wooded than the most of this region and are cultivated in places. On the N. and NE. rise low flat hills. The valley plain itself is well cultivated, and the villages are large and clean. The inhabitants show little trace of foreign blood and appear prosperous.

**Bozje Kōi** (about 38 miles), alt. 2,145 ft., is passed about the middle of the plain, and some miles farther the track ascends gradually, first through evergreen oak scrub and then over a terrace with maize cultivation, to **Gozlar** (about 47 miles), alt. 3,320 ft. From Gozlar the track ascends over a number of ridges to a summit from which the Dalaman Chai region comes into view. The pass is called the **Eskere Bogħaz** (distance to this point about  $51\frac{1}{2}$  miles), alt. 4,310 ft. The surrounding country is thickly wooded. From the summit the track descends steeply past a spring in the valley of a stream called **Cham Dere** and then bears SE. across side-valleys to a second spring on a small cultivated terrace (about 58 miles), alt. 2,930 ft. About 4 miles farther is the village of **Assar** with some maize-fields. The direction is now S. into the valley of the **Dalaman Chai** (about 60 miles). The river is crossed by a wooden bridge close under a narrow rocky gorge, alt. 1,490 ft. Farther downstream there is a broad rapid ford.

The track now winds S. over mountainous country for about 4 miles to the **Karanfyl Chai** (see Vol. III, Part 3, p. 19), here called Takhtajy Chai after a village farther E. in the mountains. The valley plain here is partly cultivated, and beyond it the track continues over relatively low hills for another 5 miles to the village of **Oghlan Sini** lying in a small plain. From here the route runs for about 6 miles along the eastern rock-wall of the **Dalaman Chai** to a broad tributary of the river called the **Kilgan Chai**, said to come from the village of Mudanar 1 hr. farther E. The stream is crossed, and an ascent follows over a ridge down into the valley of the **Kertek Chai** and then over mountains, still in a general S. direction, to **Gürlek** in the valley of the **Chal Chai** (distance from Mughla about 78 miles). From **Gürlek** there is said to be a road, fairly regularly used, leading in about 16 miles down to the lower valley of the **Dalaman Chai**, where the direct road from Mughla to Makri (Route 198) may be joined.

## ROUTE 201

### KALE DAVAS—AJY PADEM, 29 miles

This route is a horse-track throughout but apparently nowhere difficult. There is a good deal of cultivation for the first few miles and a certain amount in the Bars Ova (see miles 11½–16½). For the next stage there are few supplies but abundance of timber. Cultivation again becomes general as Ajy Padem is approached. Water is generally scarce in summer. Timber is plentiful.

miles

0

**Kale Davas**, alt. 3,575 ft. Route at first follows the Yerengüme road NE. (see Route 196, mile 34).

2½

The track to Yerengüme continues NE.

Present route turns E. up a broad valley; stream dry in August.

miles

4

**Baharlar**, alt. 3,170 ft., small Yürük settlement a little to l.

Track ascends ENE. over a low rise into a fertile recess of the Davas Ovasy.

7½

**Gharib** village, alt. 2,995 ft., at the eastern edge of the plain.

Track bends E. up a broad valley with cereal cultivation; stream dry in August; low hills to r. and l.

10¾

Direction now SE. over a low col.

11½

Summit. Descent SE. to the **Bars Ova**, a large plain stretching southwards. Track skirts its NE. side. The plain appears to have no outlet for drainage. The Sandras Dagħ is visible to S. To E. is the broad mass of Boz Dagħ, alt. 8,200 ft., while to N. and W. are lower limestone hills, alt. 4,300–5,000 ft., which rise about 3,300 ft. above the plain.

14¾

**Nikifer**, alt. 3,425 ft., chief village of the plain; extensive tobacco cultivation.

16½

Track bends E. up a valley; extensive pine forest.

18

Direction changes to NE. up a ridge.

18½

Col, alt. 5,200 ft. Descent into a large valley draining E. to the plain of Ajy Padem. Track crosses the valley and ascends the opposite ridge into a short valley running ENE.

20¾

Chromite mine in the valley, owned (in 1904) by Mr. Gaudin of Smyrna; mine buildings down below in the valley, alt. 4,485 ft.

A short distance on the valley joins a larger one draining ESE. Track turns down the latter; water in the stream in August.

24

Mill. The valley here is wider; some cultivation.

Track now turns to l. up the slope.

25¼

Summit, alt. 4,700 ft. View SW. over the broad mass of Boz Dagħ. On the nearer side a broad V-shaped valley, with numerous side-valleys, cuts

miles

deep into the mountain system, giving it the appearance of a ridge of horseshoe shape rising here and there in rounded summits. To NW. behind easy slopes rises the limestone block of Akche Dagħ. In front the country is furrowed by many valleys, and slopes E. to the plain of Aĵy Padem.

- 29      Track descends E. and then NE., with a valley to l.  
          **Aĵy Padem**, small place at the mouth of the valley just mentioned, alt. 3,125 ft.; head-quarters of a kaza.

## ROUTE 202

DENIZLI—TEFENY, 65 miles

This route appears to be fairly easy after the Kazyk Bel is crossed. The plain of Kara Öyük Bazar, however, in spring is in places an almost impassable morass. The road runs for the most part through upland valleys. Supplies and water are fairly plentiful. The hills between Kum Avshar and Tefeny are well wooded.

- 0      **Denizli**, alt. 1,310 ft. Road runs generally SE. across the cultivated plain; many trees.
- 2½      Cross a stream; some houses among cereal cultivation and fields of clover.
- 3¼      Cross the **Baghyrsak Dere**. The stream, which is also apparently called Gökpunar Su, here runs N. to the plain of the Chürük Su.
- 5      Reach top of slope. From here Denizli bears 305° and the mouth of the pass in front 115°.
- 6¼      Descend and cross a bridge over the Baghyrsak Dere. Ascend by a toilsome path over a hill.
- 8½      **Sultan Emir Su** spring, alt. 1,880 ft., which forms a small lake, whose waters drain to the main stream by a remarkable swallow-hole (*düden*). Near it is a kahve.

miles

- Track then ascends for some distance and again descends to the stream.
- 10 $\frac{3}{4}$  Recross the stream by a bridge.
- 12 **Chukur Köi** to r. deep down in the valley. A track branches thence to Yerengüme (4 hrs.).  
Easy hill-slopes and cereal cultivation.
- 12 $\frac{1}{2}$  Begin the steep ascent of the **Kazyk Bel**.
- 15 $\frac{1}{2}$  Summit, alt. 4,370 ft. Steep rough descent with a westerly trend after some distance.
- 16 Kahve and fountain beside the road. A track from Davas Ovasy comes in here on the r.
- 20 $\frac{1}{2}$  **Kyzyl Hissar**, alt. 3,180 ft., on an outlier of the Akche Dag, at the mouth of a small valley on the W. side of the plain. The population is partly Yürük. Some vine cultivation; cereal cultivation in the plain.
- 21 Reach a stream and follow it downwards.
- 21 $\frac{1}{2}$  A track branches to l. to **Ayash** village.
- 22 $\frac{1}{4}$  A track branches to l. to **Yataghan** village (1 $\frac{1}{2}$  hr.).
- 28 $\frac{1}{2}$  **Kara Öyük Bazar** village built partly on a hill, partly in the plain. From here Kyzyl Hissar bears 309°.  
Direction now SE.
- 30 **Davas Chiftlik** in the plain.
- 31 $\frac{1}{2}$  **Chorum** village to l.
- 37 $\frac{1}{2}$  **Dereköi** to l.
- 40 $\frac{1}{2}$  **Yümrütash** village to l.
- 42 $\frac{1}{2}$  Here the ridge which bounds the plain on the W. recedes. **Yazyköi** and **Dodurga** villages to E.
- 44 $\frac{1}{2}$  **Kum Avshar** village to E.  
Road runs SSE. along the eastern edge of the plain, leaving **Cham Köi** (see Route 204) on high ground to r. The direction now becomes more easterly, the route turning to l. through the hills.
- 47 $\frac{1}{2}$  Cross a stream running W. and ascend over a long ridge connected with high ground round **Cham Köi**.
- 49 Direction now E. through wooded hills, leaving

miles

**Küchük Oghlan** village (? Kulman; see Route 208) to r. Many ascents and descents.

60½ **Ok Köi** on the edge of the Tefeny plain. Road crosses the plain; several villages.

65 **Tefeny**, small Moslem village with a fine spring.

## ROUTE 203

### KARA ÖYÜK BAZAR—MAKRI

The route at first follows the Adalia road (see Route 11 in Vol. III, Part 3), branching to r. from it after some distance and following the course of the northern branch of the **Gereniz Chai**. **Chai Köi** is reached about 1½ mile W. of Pederbey (see Route 205, mile 15), at the junction of the northern and southern arms of the Gereniz Chai where it enters the mountains. After 5-6 hrs. the road passes through **Charyklar**. The village is situated under two striking peaks on the E. side of the river, which is spanned by a bridge of primitive construction a short distance upstream.

The river valley now narrows, and cultivation decreases, though patches of tobacco and maize may still be seen. In the valley-floor are a few wild pear trees with willows and fine planes, while on the higher slopes are pines and junipers. The river receives few tributaries. **Kelekji Köi** is passed at 2 hrs. from Charyklar and, 1 hr. farther on, **Akche Köi**. The road crosses to the r. bank of the river by a wretched bridge. By this time the stream is broad and unfordable, with a swift current. **Göljük** village is passed (about 1 hr. from Akche Köi), and the track continues through scrub along the valley-slopes to a second bridge leading to **Yekentö** (about 5½ hrs. from Charyklar).

The slopes now become steeper, and the valley deepens. Villages become fewer and finally disappear altogether. About ½ hr. S. of Yekentö the bare ridge of the **Boz Dag**

ends on the r. bank, and the route ascends over the **Algy Dagħ** on the l. bank by a stony track and apparently joins the path from Mughla via the Eskere Chukuru Ovasy about the point where the latter crosses the Karanfyl Chai (see Route 200).

## ROUTE 204

### KARA ÖYÜK BAZAR—KHORZUM, 27 miles

There are two roads in common use between Kara Öyük Bazar and Khorzum. The western route runs to **Pederbey** (12 miles), where the road from Khorzum to Yerengüme is joined (see Route 205 in the reverse direction from mile 15). The other road keeps along the eastern edge of the plain to **Kum Avshar** (15½ miles), whence it runs via **Cham Köi** (20 miles) to **Yusufje** (24 miles) on the Khorzum–Yerengüme road.

Neither road is metalled, but there is no difficulty for wheeled transport in dry weather. The distance is about the same in both cases.

## ROUTE 205

### KHORZUM—YERENGÜME, 50 miles

This is an unmetalled road, but fairly easy for pack-transport except in wet weather, when the low-lying parts of the route (up to about mile 24) are liable to flood. The ascent over the Duman Beli pass (see mile 25½) is rough, but the gradients are not difficult.

Supplies of cereals are fairly abundant, and there is a good deal of timber on the hills.

miles

0

**Khorzum.** Road runs NE., following the foot of the hills to l. The soil is barren, and the igneous rocks in the district are rich in iron ores.

miles

- 3      **Yusufje** village in the valley of the **Gereniz Chai**.  
Track continues over rounded hills covered with pines and oak scrub.
- 5½      Route emerges from the district of broken hills into sight of the plain of **Kara Öyük Bazar** and descends through pine woods. Extensive wheat cultivation in the plain. **Cham Köi** is seen to r.
- 9      Reach the l. bank of the **Gereniz Chai**, here a deep and rapid stream. The path now is very bad after rain.
- 15      Bridge over the **Gereniz Chai**, leading to **Pederbey** village on a small hill in the plain; bad water and poor supplies.
- 16½      Spring. Road runs WNW. across the northern branch of the **Gereniz Chai**.
- 22      **Siller** (Salari) village to l.
- 24      **Ajy Padem** village among trees on the hill-side (see Route 201, mile 29). **Kara Öyük Bazar** is visible to N,
- 25½      **Evgara** village to r. Above it is a wood of fine pines and junipers.  
Some distance farther the track leaves the plain and enters a narrow valley, ascending a stream which drives several mills. The pass is called **Duman Beli**.
- 31½      Guard-house and good spring.
- 33      Summit. Long easy descent.
- 35½      **Abbas** village among orchards in a small plain. Some distance on, the ruins of **Sebastopolis** are passed, and near them (to l.) the village of **Kyzylje**.  
Road winds over and among hills covered with scrub.
- 42      **Uzunbunar** village on the edge of the **Davas Ovasy**. Fig plantations are now met with. The wheat crop is harvested in May.  
Track now bends northwards along the foot of the hills.
- 50      **Yerengtime**.



## ROUTE 206

## KHORZUM—SÜGÜT, 25 miles

This is an unmetalled track which is probably fit for carts in summer. In places the route is badly defined, and the going is very heavy after rain. It may be made nearly, if not quite, impassable by snow in winter.

The country traversed is fairly well cultivated. The hills between the Khorzum plain and that of Sügüt are wooded in places as far as Bayndyr. South of that point trees seem to be fewer. There is a fair amount of thin scrub, and grass is abundant in spring.

The distances given below are only approximate.

miles

- |    |  |
|----|--|
| 0  | <b>Khorzum.</b> Track fords the Khorzum Chai, here a deep and swift stream, and then runs ESE. across the plain; extensive wheat cultivation. <b>Osman Kalfalar</b> village is passed (to l.); a lake surrounded by reeds lies to r. at the foot of low hills.   |
| 8  | <b>Göl Hissar</b> to r. on a rocky island in the lake connected by a causeway with the mainland.<br>Some distance on <b>Chandyr</b> is passed (to l.). The village lies at the foot of a hill of the same name. North of it is <b>Sargy Köi.</b><br>Track crosses a deep stream from the E. and reaches the foot of the hills. Khorzum now disappears from view. Some distance farther a spring is passed, near some fine poplars. |
| 17 | <b>Bayndyr</b> village on a large and rapid stream; long narrow valleys, partly wooded, partly cultivated, extend in all directions up into the hills.<br>Track now winds uphill; direction now more southerly.  |
| 21 | <b>Summit.</b> Many well-cultivated mountain basins  |

miles

can be seen on either side. In one of these is **Yazyr** village, to r., among trees.

22 Cross the ridge overlooking the **Sügüt** plain. To l. is the **Sügüt Göl**.

23 Reach the plain. Direction now SE. across the plain ; fine grazing in spring.

25 **Sügüt** village on the marsh-land almost on a level with the lake.

## ROUTE 207

**SÜGÜT—YÜKSEKKUM**, about 72 miles

The track runs W. from **Sügüt** round the hills at the western angle of the **Sügüt** plain and then ascends over a low rocky ridge into the **Yazyr** basin, a depression lying over 600 ft. below the level of the **Sügüt** plain. The streams drain, partly in artificial channels, from S. and SW. in a northerly direction through a cleft in the hills, and **Yazyr** village (about 5 miles from **Sügüt**) lies on the heights which overlook the basin from the W. Some distance S. of the village is a spring at the foot of the high ground a little N. of a rock monument.

As the track winds steeply up the valley in a southerly direction the hills fall away to r. and l. Two small plains enclosed by low heights are crossed, and a broader treeless plain sloping NW. is seen in front, partly occupied by a lake about 2 miles long, the **Yazyr Göl**. This plain is the yaila of **Yazyr** village, and numerous tents and herds may be seen here in summer. The lake lies about 1,000 ft. above the level of the **Yazyr** basin, into which it apparently drains by an underground channel. The plain is surrounded on the N., W., and S. by hills which can hardly be said to form a continuous chain. It rises towards the SE. and then falls immediately to a valley, beyond which rises a mountain called **Top Dag**.

The track crosses the north-western end of the plain. At about 8 miles from Sügüt the country becomes uneven, and a number of streams are crossed. After a slight ascent the route reaches (at about 14 miles) a bare undulating yaila about 2 miles across, beyond which it descends steeply among pines and thujas to the village of **Dermil** (about 18 miles) on a stream bordered with fine oaks, planes, elms, willows, and tamarisks. Dermil seems to be rather an important local centre, and tracks branch from here northwards to the plain of Khorzum and S. to the upper valley of the Xanthus (Eshen Chai).

The route now runs westwards to **Ebejik** (about  $26\frac{1}{2}$  miles) in the upper valley of the Khorzum Chai. Here a tributary of the Khorzum Chai comes in from the SW., and the track ascends the valley for about  $3\frac{1}{2}$  miles to **Pirnaz** village, from which the stream takes its name.

From the little evidence available it appears that the country for a good many miles from this point becomes increasingly difficult. The track runs W. to **Boz Alan** (about 34 miles) and after another  $2\frac{1}{2}$  miles reaches **Denek Köi**, a village lying between a stream from the SE. called the Denek Chai and the Karanfyl Chai. The latter comes from the mountains to S., and N. of Denek Köi flows through very difficult, if not quite impassable, country to join the Dalaman Chai.

The track now turns SW. and runs across difficult country, crossing small tributaries of the Karanfyl Chai to **Kara Bayr** (about 42 miles), where the direction becomes more westerly. The track ascends over a ridge, alt. 4,500 ft., and then drops down into the narrow rugged valley of the **Chal Chai**, which it follows to the scattered village of **Gürlek**, alt. 2,100 ft. The distance to this point is about 48 miles. The valley of the Chal Chai here becomes a little more open and is followed until the track joins the path down the Dalaman Chai valley (see Route 203). The Dalaman Chai valley is then followed to **Ak Köprü** (about 6 miles from Gürlek). From here it is

possible to strike W. across the hills and reach **Yüksekkum** in about 18 miles from **Gürlek**. A longer, but probably easier and more frequented, road continues down the valley for about 10 miles to meet the road from **Yüksekkum** to **Makri** (see Route 198 in the reverse direction from about mile 47 to mile 32).

As far as **Dermil** the country appears to be fairly easy, and supplies in small quantities should be obtainable. The region W. of **Dermil** to the **Dalaman Chai** valley becomes increasingly difficult, and supplies are practically unobtainable.

## ROUTE 208

### KHORZUM—TEFENY, 25 miles

There are apparently two tracks from **Khorzum** to **Tefeny**. One of these crosses the plain eastwards and then runs NE. up the valley of a tributary of the **Chavdyr Chai**, crossing several small streams. After crossing the watershed it descends NNE. into the plain of **Tefeny**.

The other route follows the road described in Route 204 for a few miles and then turns to r. up the valley of the **Ak Su**. A short distance up the valley the path leaves the main stream, which here comes down a great gorge. After crossing several tributaries **Kulman Kõi** (about 13 miles) is reached. About  $1\frac{1}{2}$  mile beyond this point there is a steep descent nearly to the level of the main stream, which is followed for a short distance and then crossed. About  $2\frac{1}{2}$  miles farther the river divides. The path follows the r.-hand branch and ascends steeply to the watershed, after which it drops down to the **Tefeny** plain.

The distance in each case is about the same, roughly 25 miles.

There is no evidence as to supplies.

## ROUTE 209

## KARA ÖYÜK BAZAR—BULDUR, 50 miles

This is an unmetalled road which might, however, be passable for wheels in summer, though it would require widening in places. The only steep gradients occur about mile 10 and mile 31.

Supplies are scanty, and water is scarce in summer. There is a fair amount of timber at intervals on the hills and in the valleys.

miles

- |    |  |
|----|--|
| 0  | <b>Kara Öyük Bazar.</b> Road runs E. across the plain.   |
| 1  | <b>Avshar</b> village to l., picturesquely situated at the foot of the hills; opium cultivation.   |
|    | Road passes a mill and following a stream enters a narrow valley running E. between low ridges. The ground is partly cultivated, largely fallow or covered with scrub.             |
| 3½ | <b>Takhtaly</b> village, 1½–2 miles distant, bears 50° up a stream valley to l.  |
| 3¾ | Cross the <b>Takhtaly Su</b> . Road bends gradually ESE. between rounded granite hills; few trees along the stream; low scrub on the slopes. A T.L. accompanies the road.          |
| 4½ | <b>Sirchalyk</b> village to l. Cemetery close to the road. Some cultivation.   |
| 5  | Hillock to l.  |
| 6  | The valley hitherto followed opens into another called <b>Kurtlar Ovasy</b> .  |
| 6½ | Cross a stream. Road curves E., keeping <b>Gönü</b> village to l. Vine cultivation round the village. Another village called <b>Karaköi</b> lies beneath thinly wooded hills to S. |
|    | The road here is narrow, and runs for a short distance along the northern slopes.  |

miles

10 Pass a mill and ascend steeply. After some distance the path enters a bare valley running ENE. No vegetation except stunted pines. The valley is called **Eshler Yaila**. Near the head of it is a solitary guard-house. A few hundred yards farther a view opens out from the summit over the Salda Göl lying in a deep hollow surrounded by low wooded hills.

Road now is good and descends ENE. along thinly wooded slopes ; pines and deciduous trees.

Spring. **Salda** village to l.

13½ Road crosses a rocky spur, and a free view is obtained of the **Salda Göl**. It is 4-5 miles long and brackish, and the salt has formed a crust round the edge. The hills to north rise in steep cliffs from the water, while along the southern shore there is a flat bare sandy strip.

16½ Cross a stream.

17¾ Spring. A short distance farther on the eastern end of the lake is reached.

**Kayadihi** village, a little beyond the lake, is passed to l. Scanty cultivation.

20 Reach a broad flat treeless plateau stretching E. between bare rocky ridges.

22½ **Kara Atly** village in a hollow of the plain, among limestone rocks. Opium and cereal cultivation. The district suffers from drought occasionally in the summer. In winter the cold is intense.

A route from Chardak to Tefeny crosses here (see Route 211, mile 22).

Road now runs at first NE. across level plain. After some time the T.L. joins the route and accompanies it in an ENE. direction.

30 Enter a narrow well-wooded valley ; many wild pears. **Navlo** village lies to l. on a hill.

Road runs through vineyards and fine trees.

31½ Reach the edge of a deep valley, in which lies a lake

miles

stretching SE. and surrounded by steep cliffs. Road descends steeply past a clear spring. The soil in the valley-bottom appears dry and sandy, but there are fine gardens round the village of **Yaryshly**, through which the route passes.

33 Ascend a hill at the E. end of the lake and enter a wide barren plain bordered by low bare hills; scanty cereal cultivation.

The **Buldur Göl** comes in sight; wide view.

34½ Fine gardens beside the road; walnut, apple, plum, and cherry-trees among fine planes, willows, and hawthorns.

39 **Yaryk Köi**. Road runs now through gardens past a cemetery. The **Buldur Göl** now lies to l.

40½ **Yasy Köi**, prosperous village among gardens on the banks of a small stream flowing to the lake in a deep bed overgrown with tamarisk scrub. Road crosses by a wooden bridge and runs along flat dry ground beside the lake. Little cultivation. One or two watering-troughs are passed.

42 **Yasy Köi**, small village to r.

44 **Cherchik** village to r. Road passes a spring.

44½ Small stream running into the lake. Road crosses by a wooden bridge resting on stone piers. The rocks here approach close to the lake, leaving only room for the road. A short distance farther on a guard-house is passed. Bare conical sand-hills now accompany the road on the r.

48½ **Buldur** comes in sight.

50 **Buldur**, P. and T.; head-quarters of a sanjak under Konia; pop. 18,700, composed of 14,000 Turks, 3,100 Greeks, and 1,600 Armenians. The town is built on a hill surrounded by large vineyards about 2 miles SE. of the lake of the same name. The chief industries are tanning and dyeing, and the weaving and bleaching of linen. (See also Vol. III, Part 3.)

## ROUTE 210

## YASY KÖI—CHARDAK, 34 miles

This track appears to be fairly easy as far as mile 19, beyond which the surface is bad, with many steep gradients for about 8 miles.

Supplies are scarce, and there is little fresh water in summer. Timber is noted at mile 10½, in which neighbourhood the country is said to resemble an English park.

miles

- |     |   |
|-----|---|
| 0   | <b>Yasy Köi.</b> Track runs N. past the western end of the <b>Buldur Göl</b> ; ridge of hills to l. partly covered with scrub; many partridges.   |
| 3   | The lake recedes to r. Direction still N. along the foot of the ridge.  |
| 3½  | Track now runs along the mountain-side; on the r. a river runs in a deep hollow to the lake.  |
| 5   | Pass a mill and ascend the l. bank of the river a little N. of W.; the valley is narrow.  |
| 10½ | Direction here nearly W. through pines, cedars, and junipers. Farther on the track crosses a small treeless plain, shut in on the W. by high hills running nearly NE. and SW.   |
| 15½ | <b>Akche Köi</b> , small village at the foot of the ridge just mentioned.<br>Track descends past a mill into a plain. The direction is then at first WSW. near the foot of the hills on the r. and then nearly W. To l. at some distance is another range of hills. |
| 19  | Stony winding descent; the <b>Chorak Göl</b> comes into view in front.<br>Track runs W. between the lake and barren rocky hills on the r.   |
| 23½ | Reach the head of the lake. Apparently at this  |



miles

point a track comes in on the l. from Tefeny (see Route 211, mile 10½).

- 25½      Route turns to r. through the ridge; direction due N.  
The Ajy Tuz Göl comes in sight. Steep descent  
down to the l.; stony surface.
- 27      Reach the plain. Direction now NW.
- 34      **Chardak.**

## ROUTE 211

## CHARDAK—TEFENY, 38 miles

This is an unmetalled road possibly passable for carts in dry weather. Supplies in small quantities should be procurable at short intervals. Water is probably scarce in summer, and there seems to be little fuel except scrub.

The first 10½ miles of the route appear to be identical with the last stages of Route 210.

- 0      **Chardak.** Track runs SE., crossing the railway near the station and then through the plain.
- 6½      Begin the steep stony ascent of the pass between **Sügüt Dagh** to r. and **Gümüş Dagh** to l. Alt. at edge of plain about 3,100 ft.
- 9¼      Summit, **Ak Derbend**, alt. 3,900 ft. The boundary between the vilayets of Konia and Khodavendighiar runs through here.  
Track descends due S.
- 10½      Foot of descent beside the **Chorak Göl**. A track by the N. side of the lake apparently branches to l. (see Route 210, mile 23½).
- 12¼      **Bayndyr**, alt. 3,550 ft.
- 15½      Summit of a rather steep ascent.
- 18      Small village to l.
- 22      **Kara Atly**, alt. 4,110 ft. From the hill behind the village the hill E. of the Ak Derbend bears 17½° and that on the W. side 351°. The ground in front drains E. towards a morass round the village of Genjeli.

miles

Present route crosses a track from **Kara Öyük Bazar** to **Buldur** (see Route 209, mile 22½).

22½ Track bends to r. up the side of a stream.

24½ Cross a low watershed. The country in front drains to the **Gebren Chai**. From a short distance farther on the hill on the W. side of the **Ak Derbend** bears  $348\frac{1}{2}^{\circ}$  and the hill S. of **Bayındyr** bears  $355^{\circ}$ . **Karamanly** (see mile 34 below) lies at about  $173^{\circ}$ .

25½ The main road continues straight on towards **Karamanly**. Present route turns to r.

27 **Gebren** village, alt. 4,250 ft.; fine spring beside the mosque; ancient ruins.

27½ Cross a stream flowing to the l. Three others are crossed in the next 2 miles. **Dere Köi** lies to r. under the hills.

30 The **Gebren Chai** is now close to the track on the l.

30½ The river is now some distance off. Track crosses a stream and ascends.

31 Reach a moorland plateau. The river flows some distance away to l. in a deep channel between the mountains. The hill on the W. of the **Ak Derbend** reads, from a little to r. of the track,  $348\frac{1}{2}^{\circ}$ .

34 **Karamanly**, alt. 3,950 ft. A road comes in on the l. from **Buldur** (see Route 212, second paragraph).

38 **Tefeny**, alt. 4,000 ft.; strong spring.

## ROUTE 212

**TEFENY—BULDUR**, about 50 miles

There is no detailed description available for the whole journey from **Tefeny** to **Buldur**. The usual route appears to run E. or ENE. across the plain to a bridge over the **Gebren Chai**, beyond which it reaches the foot of the hills and ascends to **Kemer** village (about 18 miles). From here it winds northwards over the hills which bound the **Gebren Chai**

valley on the E. The country appears to be fairly easy, and there are probably a number of alternative tracks leading either roughly parallel to the river to join the road from Kara Öyük Bazar along the S. shore of the Buldur Göl (see Route 209), or more directly to Buldur across the valleys running down W. from the Kestel Dag and Gravgaz Dag, which lie S. of Buldur.

An alternative route runs NE. from Tefeny via **Karamanly** (see Route 211, mile 34) along the edge of the valley till the hills close in on the river. There appears then to be a choice of routes, either northwards over the hills in the direction of the Navlo Göl to join the main road from Kara Öyük Bazar, or over the ridge dominating the river and across the river valley to join the main road E. of Yasy Köi.

Supplies are plentiful for the first part of the journey the Tefeny plain being well cultivated. After the hills are entered cultivation is probably scanty. Water is probably scarce in summer. There is no information regarding fuel.

## ROUTE 213

### TEFENY—FUGHLA

There are no details available for a direct road between Tefeny and Fughla. It is possible to follow the Adalia road (see Vol. III, Pt. 3, Route 11) over the hills into the **Istanos Chai** valley, and then take one of the paths which branch to l. from it over the hills into the Fughla plain.

A more direct route runs across the Tefeny plain ENE. to **Kemer** (about 18 miles). From here there is probably a direct road across the hills to Fughla. If not, a track may be followed SE. to **Andia** (about 15 miles from Kemer), whence there is an easy path along the foot of the hills to **Fughla** (3½ miles from Andia).

There is no information regarding supplies.

## ROUTE 214

## FUGHLA—BULDUR, 40 miles

This is a pack-route, though it is possibly fit for carts in dry weather. Small quantities of supplies should be procurable at short intervals. Drinking-water is scarce in summer, and there is probably little fuel except scrub.

miles

0 **Fughla.** Track runs NE. across the Fughla stream and along the foot of the hills on the l.

3½ Cross a stream which comes down a pass to l. and flows E. through the plain to a small lake.

The ruins of Comama lie on a hillock in the plain about 2 miles to E.

4 **Ürgüdlü.** The villages of **Yurail** (? Yüregül), **Ambahan**, and **Kechili** are passed during the next few miles. The plain to r. is marshy.

9 Summit of a low ridge which forms the watershed between the lake just passed and the Kestel Göl.

10½ Cemetery on l.

11 The **Kestel Göl** now lies below the road on the r.

11½ A path along the S. side of the lake comes in on the r.

Track crosses a ridge, with a hill between it and the lake, which here is ½ mile to W. Kestel bears about 363°.

13 **Kestel** village. Track continues in a general N. direction, skirting the lake.

16 **Kashly Oba.** Ascent begins to a col.

17½ Summit; cemetery and ancient ruins; Kestel bears 215° and the col mentioned under mile 11½ above 201°.

18½ Track ascends a small pass into a valley called **Kush Baba Yaila**. It then turns to r., ascending the hills, and crosses a summit.

miles

- 19½ A track branches to r. to Aghlasun via Chepish 4–5 miles farther E.  
Long, steep, and winding descent begins into a valley running nearly E. and W.
- 22 **Arvaly** village a little above the level of the valley plain on the r. Cheltikji village lies about 1 hr. down the valley, with Chepish near it.  
From here the regular route apparently runs NNE. to Kyz Kõi (1 hr.) to join the chaussée (see Vol. III, Pt. 3, Route 12). Present route ascends a long pass up the mountain in front.
- 25½ Summit. The hill above and on the W. of Gravgaz bears 316°.
- 26 Track turns to r. **Ovajyk Yaila** ¼ mile to l.  
Descent continues to a narrow plain draining to Buldur.
- 27½ The pass crossed at mile 25½ bears about 128°.
- 30½ **Gravgaz** village ¼ mile to l. on a ridge between 2 branches of a stream.  
Track ascends a low ridge; bearing about 8°. Buldur lies at about 352°.
- 33¼ Track now bends more to the l.
- 34 About here apparently the track joins the road detailed in the reverse direction in Vol. III, Pt. 3, Route 12.
- 34½ **Manderma** village to r. under the mountains, about 2 miles distant. Farther away, to SE. among the mountains, is Marmala.
- 35¾ Old cemetery. **Manderma** bears about 92°, the road in front 355°.
- 36 Descent down a ravine. Some distance farther on a track diverges down a side-valley to r. to **Kurna** village on a stream flowing to l.
- 37½ Cross the Kurna stream.
- 38 Cross a stream from the r.

miles

- 39 A track from Gravgaz via Bayndyr (1 hr. distant) and a stream come in on the l.  
Track crosses a stream from the r.
- 39½ Stream from the r.
- 40 **Buldur.**

## ROUTE 215

## BULDUR—DINEIR, 32½ miles

There is no recent information for this road. It is apparently unmetalled but should be easy in dry weather. Supplies are probably fairly plentiful. Drinking-water is scarce in summer. Timber is abundant from Kechiborlu (mile 19½) to Dineir.

- 0 **Buldur.** Track runs NE. across flat stony country much broken by watercourses. These come down from the hills on the r. and have cut deep beds in the sandy soil. Occasional cultivation.
- 5 **Eski Yer** village on a stream; Kadekli some distance higher up the valley; gardens and orchards. A track branches to **Isbarta.**

Present route approaches the lake and skirts its NE. end; soft muddy banks; water slightly brackish and very shallow; many wildfowl. To NE. is an extensive plain. Rounding the head of the lake through marshy land the track runs NNW. along the foot of hills on the l.

- 19½ **Kechiborlu**, straggling village surrounded by gardens and orchards, which extend into the plain on the E.; bare conical limestone hill immediately E. of the village.

Direction now NW. A valley leads N. into the plain of Dombai. Track ascends the limestone hills on the W. side of Kechiborlu. Fairly steep ascent

miles

to the summit and then descent into a wide rich valley dotted with wild pear trees and shut in by high wooded hills; low foothills covered with dwarf oaks. The grazing should be good in the earlier part of the year, but in the autumn the grass is parched. Track keeps to the r. side of the valley.

27½    **Ikiji** (? Dikiji), small village; springs whose overflow runs W. to the Maeander.

29       Clear rapid stream from a ravine to r. This stream issues from a lake, about 2 miles in circumference, in a small plain to r. shut in by high steep hills.

32½    **Dineir.**

## ROUTE 216

KECHIBORLU—YASY KÖI, 27½ miles

This road is unmetalled but probably fit for wheels in dry weather. Supplies are rather scanty, and water is also scarce in summer. There is no information as to timber or fuel.

The distances given in the itinerary are rather uncertain.

0       **Kechiborlu.** Track runs S. through the plain, probably coinciding for some miles with the road from Buldur.

4¾       Graeco-Roman cemetery.

5½       **Kylyj.** Track continues S. for some distance and then bends gradually SW. round the foot of the low hills to r.

9       **Senir**, large village about ¼ mile from the Buldur Lake.

Direction now more westerly.

12       **Yeniköi** at the widest part of the lake. Track turns somewhat to the SW.

miles

14½ Cemetery. Track again runs W., diverging steadily from the lake.

17 Ancient ruins. The lake is now about 1 mile distant. From here the direct track apparently runs roughly parallel with the lake. An alternative route runs N. of W. up a wide valley to **Ilias** (about 2½ miles), a village situated in a nook under **Sügüt Dag**h and at a considerable height above the lake. From **Ilias** this track leads SW. for about 1 mile, across a low ridge which runs off from **Sügüt Dag**h towards the lake, and then descends S. for about 3½ miles to the lake. The direct track is then joined, running slightly N. of SW. across a number of rough promontories formed by spurs from the mountains to r.

23½ **Kara Ghent.**

Track rounds the W. end of the lake.

27½ **Yasy Köi.**



## GAZETTEER OF TOWNS

**AFTUN KARA HISSAR.** Alt. about 3,350 ft.; head-quarters of the independent sanjak of Kara Hissar Sahib; P. and T.; junction of the Anatolian and Smyrna-Kassaba railways; pop. about 33,000, including 27,000 Moslems (said to be fanatical), the rest mainly Armenians.

*General Description.*—Above the town rises a bare almost perpendicular rock about 650 ft. high, which was the Byzantine fortress of Akroenos. The summit is reached by a rock stair-way. The houses are chiefly low flat-roofed clay structures built close together to N., E., and S. of the rock and up a small valley which comes down from the hills behind. The plain is marshy in spring and largely cultivated. Several isolated crags rise out of it.

*Supplies and Commerce.*—The water is good, and the bazar is one of the best in Anatolia. There is a large trade in opium, cereals, wool, yellow berries, bees-wax, carpets, inlaid woodwork, &c.

*Communications.*—The town is a very important road-centre. Routes described in this volume connect it with :

1. Ushak (see Route 116).
2. Altyn Tash (see Route 120).
3. Dineir (see Route 174).

**ÄIDIN** (Tk. **Gözel Hissar**, anc. Tralles). Alt. about 300 ft.; head-quarters of the merkez-sanjak of Äidin in the Äidin vilayet and an important military centre; residence before the war of vice-consuls for Britain and Persia and of consular agents for France and Italy; P. and T.; station on the Ottoman line; pop. given in 1914 as 40,000, made up of 27,000 Turks, 8,000 Greeks, 4,500 Jews, and 500 Catholic Armenians.

*General Description.*—The town lies on the edge of the

Maeander plain at the mouth of the Tabak Chai valley and opposite the mouth of the China Chai valley. The railway runs through the lower part of the town, the greater part of which lies on the west side of the Tabak Chai. The stream is crossed by two stone bridges, and the Greek quarter lies on the eastern side and extends up the hill-slopes. A wide view of the town and its surroundings is obtainable from the kahves above the Greek quarter. Except in the Christian quarter the streets are generally fairly wide and straight. Behind the town and stretching to W. and E. of it rises a terrace of about 300 ft. relative altitude. To E. this terrace is broken by small valleys ; the western part of it, now occupied by olive groves, is the site of Tralles, and N. of it is the hill which was the ancient citadel. This hill falls steeply on the E. to the Tabak Chai valley.

*Supplies and Commerce.*—Water is plentiful. The town is the chief trade-centre of the lower Maeander valley and is an entrepôt of trade in cereals, cotton, raisins, oil, and liquorice. There is a large liquorice factory belonging to the firm of MacAndrews & Forbes in the plain S. of the town. Weaving and tanning are also carried on, the latter to a less extent than formerly.

*Hygiene.*—The climate in summer is hot and unhealthy.

*Communications.*—Routes described in this volume connect Aïdin with :

1. Sokia (see Route 147).
2. Tirë (see Route 149).
3. Nazly (see Route 150).
4. Mughla (see Route 178).

**AIVALYK** (Gk. **Kydoniai**). Chief place in the kaza of Aivalyk in the sanjak of Karasi ; P. and T. ; pop. in 1912 estimated at 22,000. The normal population is probably about 30,000, almost all Greeks. Before the war there were British and Greek vice-consuls here, and consular agents for France, Austria-Hungary, and Italy.

*General Description.*—Aivalyk lies on the E. side of a bay sheltered from all winds. The island of Moschonisi protects it

on the N., while on the W. is an irregularly shaped peninsula. The latter is separated by a narrow channel on the N. from Moschonisi and terminates on the W. in Cape Sarmusaky (Tuz Burun). Except for a little cultivation in valleys running down to marshes on the S., the only vegetation on the peninsula is scrub, with a few pines. To SE. of the town the ground falls to the fertile and well-cultivated plain of Yazariotis. The slopes to E. are well cultivated, while those to NE. are thickly covered with olives.

*Supplies and Commerce.*—Provisions of all kinds are plentiful. There is a fair water-supply, partly from wells, partly from springs, one in an olive grove  $\frac{1}{4}$  mile N. of the town and the other at Muradeli some distance farther E. There seem also to be two fountains on the E. side of the landlocked bay on which is the scala of Yazariotis. Wood is scarce. There is a considerable trade in oil, soap, leather, and fish. The olive-oil of Aivalyk is considered the best in Asia Minor. In 1912 there were 20 steam-driven oil-mills in the town. In the manufacture of soap only olive-oil and olive cake-oil are used. There were two steam soap-factories in 1912. Of four steam flour-mills only one was working in July 1915. There are important salt-works and granite quarries on the peninsula of Sarmusaky.

*Hygiene.*—The climate is said to be very healthy.

*Communications.*—The only routes from Aivalyk of which there is information are those along the coast to :

1. Edremid (see Route 30).
- 2. Dikeli (see Route 31).

**AK HISSAR** (Gk. *Axari*). Head-quarters of a kaza in the Sarukhan sanjak of the vilayet of Aidin ; P. and T. ; station on the Manisa-Soma-Panderma railway ; pop. given in 1914 as composed of 23,500 Turks, 5,500 Greeks, 390 Armenians, and 200 Jews.

*General Description.*—The town lies among well-watered orchards and gardens in the cultivated plain of the Gördük Chai (anc. Lykos) and on the N. side of a spur from the mountains to E. It takes its name from a fort, the ruins of

which crown a neighbouring hill. Most of the houses are built of wood.

*Supplies and Commerce.*—The chief products are wheat, maize, barley, hay, beans, oleaginous seeds, live-stock, wool, hides, opium, valonia, cotton, tobacco, raisins, carpets, &c.

*Hygiene.*—The town is unhealthy in summer owing to the presence of marshes in front.

*Communications.*—Ak Hissar is well placed to control traffic between N. and S. Roads in regular use diverge to :

1. Kyrkaghach and Soma (see Route 41).
2. Manisa (see Route 46).
3. Salykhly (see Route 96).

On the other hand, owing to the mountainous nature of the country to W. and E., the routes in these directions are fit only for pack-traffic. Two of these have been described, viz. to :

5. Aliaga (see Route 50).
6. Gördiz and Kula (see Route 93).

**ALASHEHIR** (anc. Philadelpheia). Alt. about 650 ft. ; headquarters of the kaza of Alashehir in the Sarukhan sanjak of the vilayet of Aïdin ; P. and T. ; railway station on the Smyrna-Kassaba line ; pop. given in 1914 as 35,564, composed of 30,000 Turks, 5,000 Greeks, and the rest Jews. The Greek population formerly spoke only Turkish, but Greek is coming into use.

*General Description.*—The greater part of the town lies in the plain, the remainder covering the lower slopes of the foothills of Tmolos. On a spur about 150 ft. above the town are the ruins of a citadel perhaps dating from classical times. Considerable portions of the mediaeval city walls and the round towers belonging to it are still standing.

The railway station lies about  $\frac{1}{2}$  mile N. of the town in the plain. A large number of fine houses in the suburbs belong to Greeks.

In the valley which comes down E. of the town there are three mineral springs of considerable repute. The district is much subject to earthquakes.

*Supplies and Commerce.*—The chief local products are cereals, beans, fruit, liquorice, valonia, and opium. A certain amount of cloth-weaving for local trade is carried on, and farming is an important industry.

*Communications.*—Alashehir has always been regarded as an important strategic centre, commanding as it does the approach from the Hermos valley to the plateau as well as roads from the Kayster and Maeander valleys. In this volume routes are described or outlined between Alashehir and :

1. Salykhly (see Route 103).
2. Kula (see Route 104).
3. Kelles (see Route 156).
4. Kuyujak (see Route 158).
5. Ortakoche (see Route 159).
6. Ushak (see Route 107).
7. Bulladan and Seraï Kōi (see Route 160).

**ARTAKI** (Tk. **Erdek**). Head-quarters of the kaza of Kapu Dagħ ; P. and T. ; pop. about 9,000, mainly Greeks.

*General Description.*—Artaki lies on the coast, partly on a low point which forms the northern side of the harbour. Protecting the harbour on the SE. is the conical hill of S. Simeon, connected by a low rocky isthmus with the Kapu Dagħ. Across the landward slope, about half-way up the hill, run the ruins of a fortification wall with six towers. South-west of the promontory and divided from it by a narrow channel is the island of Tavshan Ada. North of the latter and immediately in front of the town is a smaller rocky island called Panagia, on which are some ruins.

*Supplies and Commerce.*—Provisions are plentiful. The water-supply is good, and there are two streams, one of which skirts the town on the S., while the other enters the sea about  $\frac{1}{2}$  mile to N. of it. The chief export is white wine.

*Communications.*—Routes described in this volume connect Artaki with Panderma and the N. coast of the Kapu Dagħ peninsula (see Routes 17 and 18).

**BALIKESR.** Head-quarters of the merkez-kaza and sanjak

of Karasi; a permanent military centre, with large barracks; P. and T.; an important station on the Soma-Panderma line; pop. about 20,000, mainly Turks.

*General Description.*—The town lies among orchards and vineyards at the foot of gentle slopes on the western edge of a fertile plain stretching about  $12\frac{1}{2}$  miles from N. to S. and  $9\frac{1}{2}$  miles from W. to E. A large number of the houses are modern, much of the town having been rebuilt after a great earthquake which took place in 1896. In front of it are two isolated hills completely covered with cultivation, and on the N. side is a stream which comes down a valley from the W. This brook is nearly always dry in summer. The plain is drained by it and a number of other streams from N., S., and W., some of considerable size. These unite to form a tributary flowing E. to the Susurlu Chai.

*Supplies and Commerce.*—Supplies of all kinds are plentiful except water, which in summer has to be brought from some distance. Besides cereals tobacco and opium are grown. The bazar is large and busy. It is covered in, and probably dates from the Seljuk period. In 1915 there were several large Government granaries either in or near the town. There are also a large number of flour-mills and tanneries and two or three saw-mills.

*Hygiene.*—The climate is fairly healthy. In 1915 there were four new hospitals here.

*Communications.*—Balikesir is by its geographical position and environment the most important meeting-point of roads of a considerable area. Routes run from here to :

1. Edremid (see Route 25).
2. Gönen via Ilija and Koja Bunar (see Route 24, mile  $47\frac{1}{2}$ ).
3. Manyas (see Route 22).
4. Susurlu and Panderma (see Routes 29 and 23).
5. Balat (see Route 73).
6. Bigadich (see Routes 73 and 72).
7. Kyrkaghach (see Routes 91 and 92).
8. Soma (see Route 39).

**BAYNDYR.** Alt. about 300 ft.; head-quarters of the kaza

of the same name in the merkez-sanjak of Aïdin ; P. and T. ; station on the Torbaly-Ödemish branch of the Ottoman railway ; pop. given in 1914 as 25,500, made up of 15,000 Turks, 10,000 Greeks, and 500 Armenians and Jews.

*General Description.*—The town lies among orchards and gardens at the foot of the southern slopes of Tmolos and commands a wide view of the Kayster plain, which to E. is contracted by spurs from the N. The streets are narrow, and most of the houses are built of wood and sun-dried brick. The railway station lies in the plain about 1 mile S. of the town.

*Supplies and Commerce.*—There is a plentiful water-supply. The mulberry, cotton, figs, and cereals are extensively cultivated in the neighbourhood, and considerable herds of live-stock are raised. The chief exports are cereals, fruit, vegetables, butter, cheese, oil, hides, wool, tobacco, cocoons, and cotton. There are some cotton-cleaning factories in the town.

*Communications.*—Routes described in this volume connect Bayındyr with :

1. Parsa, and thence with Smyrna or Kassaba (see Route 142).
2. Torbaly (see Route 144).
3. Ödemish (see Route 146).

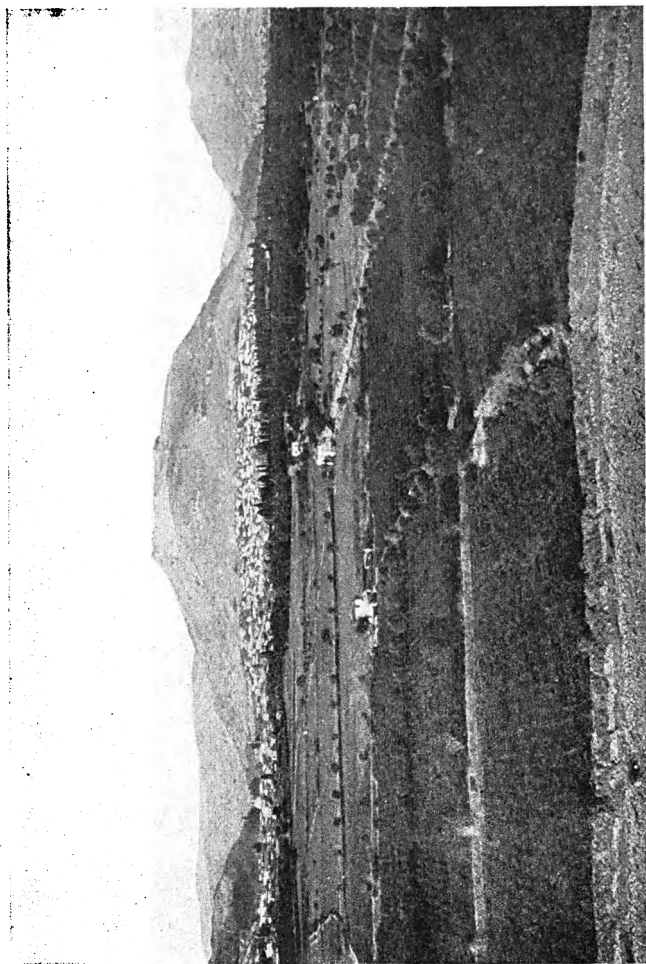
Tracks also cross the plain to S., e. g. to Tire.

A railway (branch of the Ottoman line) connects Bayındyr with Tire.

**BERGAMA** (anc. Pergamum). Head-quarters of a kaza in the sanjak and vilayet of Aïdin ; P. and T. ; pop. about 25,000, including 13,000 Turks, 10,000 Greeks, 1,000 Jews, and 400 Armenians.

*General Description.*—Bergama lies mainly on the r. bank of the Bergama Chai (anc. Selinos), partly on the plain and partly in the recess of the hills at the mouth of the river valley. The stream is subject to sudden floods. The Turkish quarter and the bazar are on the r. bank. On the l. bank is the Greek quarter, joined to the Turkish by three bridges of Roman construction and stretching up the southern slopes of a hill about 1,100 ft. above sea-level, which formed the acropolis

PLATE X



BERGAMA WITH THE CITADEL-HILL

(To face p. 550)





of the ancient city. This hill must have been a very strong position in former times. It is protected on the W. by the Bergama Chai and on the E. by the Kestel Chai (anc. Ketios). On the N. side of the hills the Kestel Chai approaches the Bergama stream, being separated from it by an isthmus little more than  $\frac{1}{2}$  mile wide and 150 ft. below the level of the acropolis. On the S. side the hill falls steeply to the plain about 900 ft. below, and on this side the streams approach even closer to each other than on the N.

*Supplies and Commerce.*—The chief local products are olive-oil, wheat, barley, beans, chick-peas, millet, sesame, gall-nuts, wax, cotton and cotton-seed, valonia, leather, cheese, butter, tobacco, live-stock, and fruit. The value of the trade in these commodities was given in 1914 as £T300,000.

*Communications.*—The city was probably a more important road-centre in ancient times than it is at present. The only chaussées which now diverge from it run W., or SW., and E. These go to :

1. Dikeli (see Route 35).
2. Menemen and Smyrna (see Route 44).
3. Soma (see Route 38).

There are remains of ancient paved roads leading through the hills on the N. and S. None of the numerous tracks in these directions in present use are metalled. An outline has been given of those leading to :

4. Edremid (see Route 36).
5. Ivrendi (see Route 37).
6. Manisa (see Routes 47 and 48).

**BİLEJİK.** Head-quarters of the merkez-kaza of Bilejik and of the sanjak of Ertoghrlu ; P. and T. ; station on the Anatolian railway ; pop. over 10,000.

*General Description.*—The town lies between two rocky hills some distance from the l. bank of the Kara Su, a tributary of the Sakaria. It has a fine public garden and a striking konak. The upper part of the town is too steep for wheeled traffic. The railway station lies about  $2\frac{1}{2}$  miles SE. in the Kara Su valley.

*Supplies and Commerce.*—Supplies are generally plentiful. The chief local industry is silk-spinning.

*Communications.*—Bilejik lies on a chaussée from Yenishehir to Eskişehir (see Route 65, under mile 34, and Route 89, mile 29½). Some details of a route from Iznik via Lefke are given in Route 69. A chaussée also runs SE. across the Kara Su to Sügüt, whence an unmetalled road continues SE. to join the Eskişehir chaussée near Sügütönü (see Route 89, mile 61).

**BRUSSA** (anc. Prusa ad Olympon). Head-quarters of the vilayet of Khodavendighiar and capital of the Turkish Empire from 1327 to 1453; P. and T.; terminus station on the Mudania-Brussa narrow-gauge line; pop. given in 1914 as 97,000, made up of about 70,000 Turks, 10,000 Greeks, 13,500 Armenians, 3,500 Jews, and 150 Europeans. Before the war there were vice-consuls in Brussa representing Britain, France, Belgium, Greece, Russia, Germany, and Austria-Hungary, and a consul-general for Persia.

*General Description.*—The town has one of the most beautiful situations in Anatolia. The greater part of it lies on the lower slopes of an outlier separated from the main block of Keshish Dagh (anc. Olympus Mysius) by the valley of the Gök Dere. Two other large valleys cut through the town, one E. of the Gök Dere, the other W. of it. To W. of the latter there are two smaller valleys. The town is thus divided into four main parts. Of these only the two farthest E. cover any considerable extent of the slopes, which here are more gentle than those on the W. The division second from the E. contains the famous mosque, Yeshil Jamy, standing in an elevated position and visible from a great distance. The next quarter to the W. falls into two parts, an eastern with the extensive vaulted bazar traversed by a broad main street, and a considerably higher western portion with the citadel. The summit of the latter is about 690 ft. above sea-level and is still partly surrounded by a wall. Between the citadel and the mountain rises the most important cold spring in Brussa, Bunarbashy, surrounded by fine planes. In the most westerly

portion of the town is the mosque of Murad II with the gardens of the Tombs of the Sultans.

The length of the town from E. to W. is about  $2\frac{1}{2}$  miles. Barely  $1\frac{1}{2}$  mile W. of the western end, and prominently situated on the slopes above the end of the spur which forms the eastern side of the Ülfer Chai valley, is the village of Chekirje with the fine mosque of Ghazy Hunkiar, the hot springs of Kapluja, and several hotels.

The town and district of Brussa are much subject to earthquakes. The most serious of these occurred in 1855 and caused considerable damage.

*Supplies and Commerce.*—The town is abundantly supplied with water from streams and springs distributed by underground aqueducts and tile pipes. With respect to commerce it lies off the track of the main trade-routes. The mountainous nature of the country to the S. has retarded the development of communications so that trade from that area flows more naturally E. to the Anatolian railway or W. to Pandermana. Brussa therefore relies almost entirely on local produce. The plain is extraordinarily rich, and the slopes of the rising ground for miles around are occupied by mulberry-trees which, owing to the abundance of rainfall, require no irrigation. Brussa is perhaps the most important centre of the silk industry in the East. Most of the cocoons from the villages in the neighbourhood are brought to the city for export or spinning. There are a good many steam spinning-mills, mostly under French or Swiss control. The native home industry both in silk and cotton has been declining of recent years owing to European competition. Besides cotton and silk cereals, apricots, vines, and raisin grapes are extensively cultivated, and there are a few olives on the slopes round Chekirje. The luxuriance of the tree vegetation adds much to the beauty of the town and district.

*Climate and Hygiene.*—The climate is very moist and the weather in summer sultry. Malaria is prevalent in the plain. The presence of numerous hot springs, however, has made Brussa a favourite health resort.

*Communications.*—Routes described in this volume connect Brussa with :

1. Mikhaliĭ (see Route 55).
2. Kirmasti (see Route 56).
3. Mudania (see Route 62).
4. Gemlik (see Route 64).
5. Iznik (see Route 65).
6. Bali (see Routes 77, 60, and 61).
7. Kutahia (see Routes 85 and 86).
8. Eskishehir (see Routes 86, 88, and 89).

**BUDRUM.** Head-quarters of the kaza of Budrum in the Monteshe sanjak of the Aïdin vilayet ; P. and T. ; pop. about 6,000, mainly Moslem but of pronounced Greek type.

*General Description.*—The town occupies the site of the ancient city of Halikarnassos. The modern name is probably a Turkish corruption of Petronion, the name given to the castle built by the Knights of St. John. The latter still stands in good preservation on a low spur which divides the bay into two parts. Behind the castle lies a narrow but fertile coastal plain sloping gradually up to steep rocky heights. In the western part of this coastal strip is the Turkish quarter, consisting of detached houses among orchards and gardens, with the bazar on the sea-shore and the khan ; the eastern portion along the shore is occupied by the Greek quarter. Most of the houses are built in the style common in the Greek islands, four-square with flat roofs or of tower shape, and white in colour. The complete absence of minarets is noticeable.

*Supplies and Commerce.*—The commercial importance of Halikarnassos depended on its command of passing trade under the conditions of early navigation. There is no hinterland for trade, and when sea-traffic began to cross the open sea instead of hugging the coast the prosperity of the town declined. The chief exports consist of figs, almonds, lemons, oranges, and olives, which grow in great luxuriance in the gardens along the shore. Water is scarce and not very good.

*Climate.*—The climate is excellent, subject to no extremes of heat or cold.

*Communications.*—There are no carriage-roads leading from Budrum. Tracks described in this volume connect the town with :

1. Milas (see Route 184).
2. Gereme (see Route 182).
3. The west coast of the peninsula (see Route 183).

**BULLADAN.** Alt. 2,070 ft. ; head-quarters of a kaza in the Denizli sanjak of the Aidin vilayet ; P. and T. ; pop. about 10,000, nearly all Turks.

*General Description.*—The town lies on the mountain-slopes in a recess at the junction of several ravines. On N., S., and W. it is protected by the mountain. On the E. it looks down over a conical hill crowned with gardens into the plain of Kash Yenije, beyond which rises the great plateau of the upper Banaz Chai and Maeander basins. A small tributary of the Maeander, called the Bulladan Chai, runs through the town. Most of the houses are built of sun-dried brick ; some are of wood on foundations of rubble. The streets are narrow and winding and often steep.

*Supplies and Commerce.*—Water is plentiful. The chief local products are cereals and cotton. The main industry is the weaving of cloth, the texture of which is half silk and half cotton.

*Climate and Hygiene.*—The climate is said to be very healthy.

*Communications.*—In ancient and mediaeval times the position of Bulladan, somewhat off the direct routes from the Hermos and Maeander valleys on to the plateau, probably made it a place of refuge during political changes. It has now some importance as controlling the shortest passage between the Smyrna-Kassaba-Afiun Kara Hissar and Ottoman railways. Routes described in this volume connect the town with :

1. Alashehir (see Routes 160 and 161).
2. Seraï Kōi (see Route 160).
3. Inei (see Route 162).
4. Demirji (or Chal ; see Route 163).

**CHANAK KALESİ.** Chief town in the mutessariflik of Bigha

and head-quarters of the merkez-kaza to which it gives its name ; P. and T. There are 3 telegraph systems, one belonging to the Eastern Company, one the ordinary Turkish service, and a military telegraph connected with the forts on the European side of the straits. The population was given in 1907 as 21,713. A considerable proportion of the inhabitants are Greeks or Jews, and before the war there were a good many Armenians. The official name of the town is Kale Sultanie. It is usually called by the natives Chanak, or Chanak Kalesi (' Pottery Fort '), a name which goes back to the foundation of the potteries established here about the middle of the eighteenth century. By foreigners the place is usually called Dardanelles. Before the war there were British, French, Greek, and Russian vice-consuls at Chanak, and consular agents for a number of other powers.

*General Description.*—The town lies about 15 miles from the mouth of the straits, on low-lying ground jutting into the sea at the mouth of the Koja Chai. It is fairly well built and is said to be probably the cleanest town in Turkey. The streets are broad and straight. Each community has its own quarter, the foreign one being along the sea-front. The most important buildings are the barracks, the military hospital, and the castle. The latter is a massive quadrangular stone fort built in 1470 by Mahomet II. There is a Lloyd's signal station a short distance N. of the castle.

*Supplies and Commerce.*—Among local industries may be mentioned tanning and pottery. The latter of these appears to be less important now than formerly. The chief exports are grain, valonia, cotton, pottery, wine, and skins ; the chief imports are manufactured goods, thread, petroleum, sulphur, ironmongery, and paper. The bazar is uninteresting. Good water is obtainable. The plain behind the town is well cultivated, and the slopes which rise about 3 miles inland are partly wooded.

*Communications.*—Roads run from Chanak to :

1. Karabigha (see Route 1).
2. Panderma (see Route 2).

3. Büyük Tepe Köi (see Route 3).

4. Bairamich (see Routes 4 and 5).

**DENIZLI.** Alt. 1,300 ft. ; head-quarters of the sanjak of the same name in the vilayet of Aidin ; P. and T. ; rail-head of a branch from the Ottoman line ; pop. given in 1914 as 30,000, composed of 27,000 Turks, 2,500 Turkish-speaking Greeks, and 500 Armenians.

*General Description.*—The town lies among gardens in the middle of a fertile plain sloping gently N. from the mountain-foot. Shallow valleys run up S. on either side of the town. The plain in the immediate neighbourhood of the town and especially on its N. side is watered by numerous irrigation-canals and springs, and its luxuriant vegetation has given to Denizli the title of the 'Damascus of Asia Minor'. The old town, now Denizli Bazar, was founded in the fourteenth century by refugees from Laodikeia and is surrounded by walls. On its destruction by an earthquake about a century ago the inhabitants moved to the present site about 1 mile farther S. The new town is also subject to earthquakes. It has a small bazar, with the large well-built khan of Dikeli Chinar or Haji Mueddin.

*Supplies and Commerce.*—Water and agricultural produce are abundant. The chief crops raised are wheat, barley, millet, sesame, maize, opium, cotton, grapes, almonds, &c. Hides and wool are exported, and linen and silk-weaving are carried on.

*Hygiene.*—Malaria is rather prevalent.

*Communications.*—Routes described in this volume run between Denizli and :

1. Seraî Köi (see Route 166).
2. Demirji (or Chal ; see Route 165).
3. Khonas (and Chivril and Dineir ; see Routes 167, 168, and 173).
4. Tefeny (and Adalia ; see Route 202).
5. Yerengüme (see Route 196).
6. Burkhanie (see Route 195).

**EDREMID.** Head-quarters of the kaza of the same name



in the sanjak of Karasi; P. and T.; pop. 12,000–14,000, of whom about 60 per cent. are Moslems.

*General Description.*—The town lies on the northern edge of the plain in a recess between spurs from the mountains to N. It is distant about  $5\frac{1}{2}$  miles E. from its port, Ak Chai, and about 8 miles NE. of Karatash, which is probably the site of the ancient town of Adramyttium. About  $1\frac{1}{2}$  mile W. of the town is the village of Frenk, which is much resorted to for its hot sulphur springs.

*Supplies and Commerce.*—Supplies and fodder are plentiful. The hills behind the town are well wooded, and there is a steam saw-mill. Water is also plentiful. Much fruit is grown, and the district is well known for excellent olive-oil and wine. Other products include honey, raisins, figs, wax, gall-nuts, valonia, sesame, soap, and tobacco.

*Hygiene.*—Owing to its elevation (200 ft.) above the plain the town is healthy. The water is good.

*Communications.*—Routes run from Edremid to:

1. Behram (see Route 11).
2. Bairamich (see Route 13).
3. Büyük Tepe Köi (see Route 14).
4. Balikesr or Balia Maden (see Route 25).
5. Aivalyk (see Route 30).
6. Bergama (see Route 36).

**ESKISHEHIR** (anc. Dorylaion). Head-quarters of a kaza in the Kutahia sanjak of the vilayet of Khodavendighiar; military dépôt; P. and T.; junction on the Anatolian railway; pop. given in 1914 as 34,600, made up of 29,000 Moslems, 3,000 Armenians, 2,500 Greeks, and 100 Jews.

*General Description.*—The greater part of the town lies on the S. bank of the Porsuk Chai. On this side the Greek and Armenian quarters, with a covered-in bazar and a Turkish bath, lie in the plain, while the Turkish quarter extends up the hill on the S. On the l. (N.) bank houses are springing up in the direction of the railway station. The ruins of the ancient Dorylaion are situated round an isolated hillock NE. of the modern town.

The Porsuk Chai at Eskishehir is 25–30 ft. wide, flowing in a fairly deep muddy bed. It provides the power for several mills and factories. It is well stocked with fish, which, however, are not good eating.

*Supplies and Commerce.*—Imports are chiefly raw materials, iron goods, glass-ware, petrol, &c. Exports consist in meerschäum (from the Dagardy mines), cereals, straw, wool, raw hides, opium, mohair, furs, eggs, &c.

*Communications.*—Eskishehir has always been important as a road-centre, commanding as it does the great routes from the NW., E., and SW. In the present volume routes are described between it and :

1. Brussa (see Routes 88 and 89).

2. Kutahia (see Route 90).

**FOCHATYN** (*Eskije Focha*, Gk. *Palaeos Phokes*, anc. *Phokaia*). Head-quarters of a kaza in the merkez-sanjak of Smyrna ; P. and T. ; pop. mainly Greek, and given in 1914 as 7,000.

*General Description.*—The town lies on the eastern side of a well-protected bay. A point projecting from the southern shore forms a natural breakwater, and leaves between it and the town a sheltered basin about 700 yds. in diameter, giving anchorage in 10 fathoms over sand and mud. A narrow bank runs all round this basin. The part of the town on this side is enclosed by a mediaeval wall, and is composed of narrow dirty streets of wretched houses. On the NE. side, facing a small inner harbour surrounded by kahves and salt-pans, is the Christian quarter, where the houses are in general good.

*Supplies and Commerce.*—The chief exports are raisins, oil, and salt. Small coasting vessels (*kaïks*) are built in the basin on the SW. side of the town.

*Hygiene.*—The climate is remarkably healthy, and the place is a summer resort of Smyrniotes.

*Communications.*—Two roads are described in this volume viz. to :

1. Haji Liman and Menemen (see Route 45)

2. Yenije Focha (see Route 43).

A fair road, of which no detailed description is available, runs to Arslan Burnu.

**IZMID** (anc. Nikomedeia). Head-quarters of the kaza and mutessariflik of Izmid, and a military dépôt; P. and T.; station on the Anatolian railway; pop. given in 1914 as 13,000, including 6,500 Turks, 4,500 Armenians, 1,250 Greeks, and 200 Jews.

*General Description.*—Izmid lies at the head of the gulf of the same name on the face of slopes falling S. and broken by deep ravines. It has a picturesque appearance, most of the houses being situated among trees and gardens. The houses are mainly of wood, with stone foundations. A conspicuous building is the Sultan's palace, which, though small, is recognizable by its white colour and the surrounding yellow walls, as well as by its commanding position on a hill above the dockyards at the western end of the town.

Parts of the ancient fortifications are still visible.

*Supplies and Commerce.*—Izmid is, next to Panderma, the chief port on the Sea of Marmara. Provisions are plentiful. The chief exports are cereals, raw silk, tobacco, vegetables, linseed, fruit, fish, fowls, eggs, and cheese. Imports consist in raw materials and manufactured goods, cotton thread, leather, hides, coffee, sugar, napery, wines, soap, oil, glass and iron-ware, building materials, &c. Silk-spinning is the chief local industry.

*Communications.*—The position of the town gives it both strategic and commercial importance. Routes are described in this volume between Izmid and:

1. Iznik (see Route 70).
2. Sabanja (see Route 71).

**KASSABA.** Alt. 270 ft.; head-quarters of the kaza of Kassaba in the Sarukhan sanjak of the Aïdin vilayet; P. and T.; station on the Smyrna-Kassaba line; pop. given in 1914 as 35,000, including 4,000 Greeks, 500 Armenians, 900 Jews, and the rest Turks.

*General Description.*—The town lies in the Gediz Chai plain near the foothills of Tmolos, which, not far to W., withdraw

at a right angle to form the plain of Parsa and Nif. Most of the houses are of stone, but a certain number are of sun-dried brick. The streets are as a rule broad and straight, with rows of trees and small squares shadowed by planes. Abundant water runs through the town and irrigates fine gardens outside it. The barracks lie on the SW. outside the town, and command both the Smyrna and the Manisa roads. The railway station is about  $\frac{1}{2}$  mile NW. of the town, with which it is connected by a carriage-road. The plain is almost entirely occupied by vineyards of raisin grapes.

*Supplies and Commerce.*—Kassaba is essentially a commercial town, and its industries are mainly devoted to the preparation of local produce, such as the drying and baling of cotton, the packing of raisins, &c. Supplies of cereals, fruit, vegetables, tobacco, and poultry are plentiful, and there is abundance of excellent water.

*Communications.*—The town is the chief military centre in the sanjak of Sarukhan, and commands the roads from Smyrna and Manisa up the Gediz Chai valley. Routes described in this volume connect it with:

1. Smyrna (see Route 137).
2. Nif (see Route 138, miles 0-5 $\frac{1}{2}$ ).
3. Salykhly (see Route 95).

**KIRMASTI.** Head-quarters of a kaza in the merkez-sanjak of Khodavendighiar and dépôt (in peace time) of 1 nizam and 1 redif battalion; P. and T.; pop. about 5,000 (800 houses).

*General Description.*—The town is finely situated at a height of 110 ft. on both banks of the Rhyndakos, which here is spanned by a wooden bridge 140 paces long. The right bank is the higher and steeper, and seems formerly to have been fortified. The river here flows with a swift current, and in spring is much subject to floods, which may do considerable damage to the low-lying portions of the town.

*Supplies and Commerce.*—Supplies are generally plentiful. Some tanning, dyeing, and weaving are carried on, and there are one or two steam mills.

*Communications.*—Routes run from Kirmasti to :

1. Mikhaliĭ (see Route 51).
2. Panderma (see Route 53).
3. Súsurlu (see Route 54).
4. Brussa (see Route 56).
5. Kebsut (see Route 58).
6. Balat (see Route 75).
7. Beyje (see Route 57).

**KULA.** Alt. 2,135 ft. ; chief place of the kaza of the same name in the Sarukhan sanjak of the Aïdin vilayet ; P. and T. ; pop. about 6,000, mainly Moslems, the remainder Turkish-speaking Greeks.

*General Description.*—The town has a remarkable situation, lying as it does like an oasis in the heart of the volcanic country. To S. of it is a small cultivated plain. Its foundation does not apparently go back beyond late mediæval times, and its period of greatest prosperity was during the latter part of the eighteenth and the first half of the nineteenth century. From this period date most of the houses of the Greek quarter. These are made of wood and lattice-work with projecting eaves, the woodwork both outside and inside being tastefully painted in bright colours. Most of the rest of the houses are of dark-coloured volcanic stone, and many of them were standing empty in 1902. The streets are broad and fairly clean.

*Supplies and Commerce.*—The chief products of the neighbourhood are cereals, cotton, valonia, and wool. The most important industry is the dyeing of wool, for which aniline dyes are now exclusively used. Carpet-making is also carried on, but to a less extent than in the villages W. of the town. A flourishing industry is the working of silver, an art perhaps introduced from the Caucasus by Circassians. There is said also to have been formerly a considerable trade in opium.

*Communications.*—Kula is the most important road-centre in the Katakekaumene. It has communication with :

1. Ak Hissar (see Routes 93 and 102).
2. Borla (see Route 100).

3. Salykhly (see Route 101).
4. Dereköi (see Route 105).
5. Alashehir (see Route 104).
6. Inei (see Route 106).
7. Ushak (see Route 110).
8. Simav (see Route 98).

**KUTAHIA** (anc. Kotiaion). Head-quarters of the merkez-sanjak of the same name in the vilayet of Khodavendighiar, and a military dépôt ; P. and T. ; station on the Anatolian railway ; pop. given in 1914 as 34,000, mainly Moslems

*General Description.*—Kutahia lies at a height of a little over 3,000 ft., at the south-western corner of the plain to which it gives its name. Immediately above it rises the hill which formed the acropolis of Kotiaion. The top of the hill is flat and of triangular shape, the highest point, at the southern corner, dominating the town from a relative height of about 420 ft. The slope of the top is towards the NE. It still shows remains of ancient fortifications, and is now largely occupied by fine gardens and poor houses, among which is a fine ancient mosque. On the W. the hill is joined to the neighbouring heights by a low ridge. On the S. is a valley, down which comes a tributary of the Porsuk Chai. This valley is planted with fine orchards and partly occupied by dwelling-houses. The stream flows N. through the town, dividing it into the old and the new quarters. The former, on the l. bank, is a maze of narrow lanes, and contains the bazar, to N. of the citadel hill. The main mosque lies E. of the hill near the stream. On the eastern bank and along the foot of the hills is the newer part, ending with the Armenian and Greek quarters. Just outside the town, at the point where the chaussée to Afium Kara Hissar leaves the town, and where a road branches to l. to the railway station, are large barracks built on a broad open plateau. The building is a two-storied structure of oblong shape, with a spacious courtyard. The military hospital stands in a walled enclosure on the western side of the plateau.

*Supplies and Commerce.*—Kutahia is a market for the pro-

duce of a wide area, and there is considerable trade in cereals, opium, tobacco, live-stock, vegetables (especially carrots and cabbages), fruit, mohair, hides, &c. The chief native industries are carpet-weaving and pottery. There is also some trade in copper-working, dyeing, and tanning.

*Climate and Hygiene.*—The winters are very cold, but the climate is said to be healthy.

*Communications.*—The central position of Kutahia gives it considerable importance as a junction for controlling communications throughout the Phrygian upland. In this volume routes are described linking Kutahia with :

1. Brussa (see Routes 85 and 86).
2. İnönü (see Route 87).
3. Eskishehir (see Route 90).
4. Emed (see Route 115).
5. Gediz and Simav (see Route 114).
6. Tolumbunar (see Route 117).
7. Altyn Tash and Afium Kara Hissar (see Routes 118 and 120).

**KYRKAGHACH.** Head-quarters of a kaza in the Sarukhan sanjak of the Aïdin vilayet ; P. and T. ; station on the Manisa-Soma-Panderma line ; pop. given in 1914 as 15,000, mainly Turks.

*General Description.*—The town lies on gentle slopes at the foot of the Chamlyja Dag. Seen from the mountain it has an imposing appearance with its 14 minarets, its factories, and the broad well-kept streets of the Greek quarter. The houses are generally well built. The streets are lit with gas.

*Supplies and Commerce.*—Kyrkaghach is famous for cotton and melons. It is also a market for cereals, sesame, olives, honey, grapes, figs, wine, opium, wool, silk, sheepskins, &c. Coal has been found in the hills behind the town.

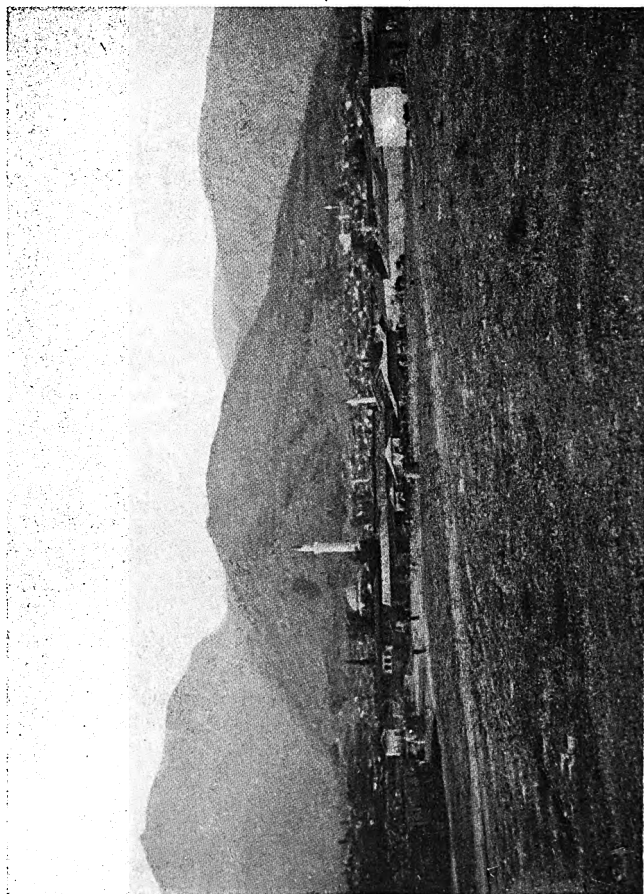
*Communications.*—Roads run from Kyrkaghach to :

1. Soma (see Route 41).
2. Ak Hissar (see Route 41).
3. Gelembe and Balikesir or Bigadich (see Routes 91 and 92).





PLATE XI



MANISA AND MT. SIPYLOS

. (To face p. 565)

**MANISA** (Gk. **Magnisia**, anc. **Magnesia**). Head-quarters of the merkez-kaza and sanjak of Sarukhan in the vilayet of Aidin ; P. and T. ; railway junction on the Smyrna-Kassaba-Afiun Kara Hissar and Manisa-Soma-Panderma lines ; pop. given in 1914 as 40,000, of whom 22,000 were Turks, 10,000 Greeks, 5,000 Armenians, and 3,000 Jews. Before the war there were in Manisa a British consular agent, an Austrian consul (who in 1914 also acted for Italy), a Greek vice-consul, and a representative of Persian interests.

*General Description.*—The town stretches for about 2 miles along the N. foot of the Manisa Dagħ. Three streams from the mountain run N. through the town, and unite N. of the railway to form a tributary of the Gediz Chai. The bazar is situated in the middle quarter, and the railway station lies towards the eastern end of the town, on the N. side of it. Several of the mosques are well known, and there is a tekke of the Mevlevi dervishes, whose head ranks next to the chief of the order in Konia.

A good deal of the land in the district is owned by descendants of the Dere Bey family of Kara Osman Oghlu.

*Communications.*—The town has always been an important road-centre. Roads described in this volume run to :

1. Menemen (see Route 46).
2. Bergama (see Routes 47 and 48).
3. Ak Hissar (see Route 46).
4. Mermere (see Route 94).
5. Nif (see Route 138).
6. Smyrna (see Route 139).

**MENEMEN.** Head-quarters of a kaza in the merkez-sanjak of Smyrna ; P. and T. ; station on the Smyrna-Kassaba railway ; pop. given in 1914 as 15,000, including 5,000 Turks, 4,000 Greeks, the rest Armenians and Jews.

*General Description.*—The town lies among fine gardens and fig orchards at the foot of the Yamanlar Dagħ, on the r. bank of the Gediz Chai. The main streets are wide and fairly well aligned. Most of the houses are of stone, or of stone and wood. Menemen was an important aeroplane station during the war.

*Supplies and Commerce.*—The chief local products are cereals. There is also a flourishing market in cotton, liquorice, dried vegetables, oils, onion seeds, melons, valonia, raisins, sesame, and sheepskins.

*Communications.*—Roads run to :

1. Smyrna (see Routes 44 and 136).
2. Bergama (see Route 44).
3. Haji Liman and Fochatyn (see Route 45).
4. Manisa (see Route 46).

**MERMERIS** (Gk. **Marmaras**, anc. **Physkos**). Headquarters of a kaza in the Monteshe sanjak of the Aïdin vilayet ; P. and T. ; pop. about 2,500, entirely Moslems, but of pronounced Greek type. The cable to Rhodes leaves the mainland here.

*General Description.*—The village is irregularly built on a low hill, which forms a small peninsula jutting into the bay. On the hill are the ruins of a mediaeval castle. Another hill rises out of the plain a little inland some distance to NW.

The Bay of Mermeris forms one of the best harbours in the Mediterranean. It is completely protected on the seaward side by Passage Island and Nim Ada. The latter is joined to the mainland on the E. by a mole. There is a mole, with 4 feet of water alongside it, at the south-western side of the village. The plain behind and to W. of the village is drained by a few streams, which nearly dry up in summer.

*Supplies and Commerce.*—The population is engaged chiefly in the coastal trade and in fishing. The plain is fertile but not much cultivated, and the chief local products are honey, turpentine, and timber. Beef, poultry, and eggs are obtainable. There is a good spring in the village, and a few small ones on the western side of the harbour.

*Hygiene.*—The place is said to be healthy.

*Communications.*—Land communications with Mermeris are very little developed. Routes described in this volume connect it with :

1. Giova (see Route 188).
2. Saranta Bay (see Route 189).

3. Cape Krio (see Routes 190 and 191).

4. Yükksekkum (see Route 199).

**MIKHALIJ.** Head-quarters of a kaza, and dépôt (in peace time) of a redif battalion ; P. and T. ; pop. 8,000–10,000.

*General Description.*—The town is strongly situated on a low broad ridge about 130 ft. high, sloping steeply on both sides, and lying between the Susurlu Chai and the Rhyndakos. It is surrounded by fine vineyards and orchards and mulberry plantations.

*Supplies and Commerce.*—Provisions are plentiful, and there is a thriving bazar. The silk industry is the chief occupation of the inhabitants.

*Communications.*—The plain is easily traversed in every direction in dry weather. In the present volume routes are described between Mikhalij and :

1. Panderma (see Routes 51 and 52).

2. Kirmasti (see Route 51).

3. Brussa (see Route 55).

4. Mudania (see Route 63).

**MILAS.** Alt. 185 ft. ; head-quarters of the kaza of Milas in the Monteshe sanjak of the Aïdin vilayet ; P. and T. ; pop. about 12,000, composed of Turks, Greeks, and Spanish Jews.

*General Description.*—The town occupies the site of the ancient Mylasa, and lies at the eastern foot of a group of hills which rise to two peaks and separate the plain of Milas from the long valley plain of Mendelia. The houses stretch from the plain up the hill-slopes. The NW. end of the town lies in a valley, in which is a spring near a well-preserved ancient mausoleum. The streets are narrow and winding.

*Supplies and Commerce.*—Commerce is largely in the hands of the Jews. The Greeks here are mostly artisans, small shop-keepers, and labourers. The chief local products are live-stock, cereals, and olives. There are a number of flour and olive-mills in the town. The water-supply is plentiful.

*Communications.*—Routes described in this volume connect Milas with :

1. Sokia (see Routes 175 and 176).

2. Budrum (see Route 184).
3. Aïdin (see Route 179).
4. Gyrova (see Route 180).
5. Mughla (see Route 185).
6. Gereme (see Route 181).

**MUGHLA** (anc. Mobolla). Alt. 1,750 ft.; head-quarters of the Monteshe sanjak in the vilayet of Aïdin; P. and T.; pop. about 15,000, mainly Moslems, but with a considerable sprinkling of Greek-speaking Greeks.

*General Description.*—The town lies at the N. end of the plain beneath a flat-topped hill, on which are the ruins of a mediaeval castle. The hill is a spur between two ravines from the N., and dominates the plain from a height of about 500 ft. It falls steeply from the top, particularly on the E. side. A fine view of the surrounding country is obtainable from the summit. The houses of the town are built largely of wood and unbaked brick on stone foundations, and stretch from the lower slopes of the hill down into the plain. The streets are narrow and winding, except for the main one, which runs through the bazar and the greater part of the town from E. to W.

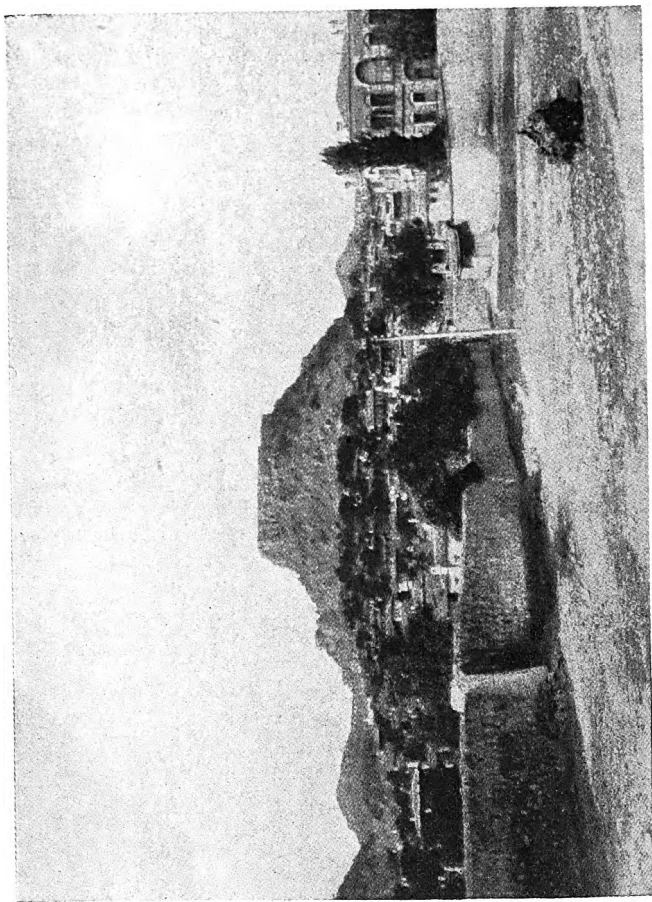
*Supplies and Commerce.*—The town is well supplied with water from the neighbouring hills. Some of the water drives mills in the ravine on the E. side of the castle hill, after which it is used for drinking. The plain has no surface outlet for drainage, and part of it is marshy in winter. In summer it is completely covered with cereal cultivation, which, however, seems to be insufficient for local needs.

*Communications.*—Routes described in this volume connect Mughla with:

1. Aïdin (see Route 178).
2. Milas (see Route 185).
3. Gereme (see Route 186).
4. Giova (see Route 187).
5. Kale Davas (see Route 197).
6. Denizli (see Route 196).
7. Makri (see Routes 198 and 200).

**NAZLY.** Alt. about 250 ft.; head-quarters of a kaza in the

PLATE XII



MUGHLA WITH THE CITADEL-HILL

(To face p. 568)

(100,000,000)

Aidin sanjak of the Aidin vilayet; P. and T.; station on the Ottoman railway; pop. given in 1914 as 15,000, made up of 11,500 Turks, 2,500 Greeks, 400 Jews, 400 Armenians, and 200 of various nationalities.

*General Description.*—The town is composed of two portions separated by a belt of open ground, through which the railway passes. The upper quarter, called Nazly Bazar, is the newer; the lower, Büyük Nazly, is the Turkish quarter, and contains the konak. The railway station lies about midway between the two quarters.

*Supplies and Commerce.*—Water is plentiful from a number of streams which water orchards and gardens and join the Nazly Su, a tributary of the Maeander. There is a large trade in cereals, fruit, live-stock, dairy produce, olive-oil, hemp, silk cocoons, opium, valonia, hides and leather, liquorice, &c.

*Hygiene.*—The climate is said to be healthy.

*Communications.*—By its position opposite the mouth of the Ak Chai valley, Nazly commands one of the main entrances to the Karian country. Routes described in this volume connect the town with:

1. Aidin (see Route 150).
2. Bademnia (and Kelles; see Route 153).
3. Seraî Köi (see Route 157).
4. Alashehir (see Routes 157 and 158).
5. Karajasu and Yerengüme (see Route 194).

**ÖDEMİSH.** Alt. 400 ft.; head-quarters of the kaza of Ödemish in the merkez-sanjak of Smyrna; P. and T.; terminus of the Torbaly-Ödemish branch of the Ottoman line; pop. given in 1914 as roughly 20,000, made up of 12,000 Turks, 5,000 Greeks, 3,000 Armenians, and some Jews.

*General Description.*—The town lies in the Kayster plain, which here stretches northwards between spurs of Tmolos. The streets are fairly broad, and a main street runs through the town from N. to S. The bazar is built of stone. The railway station lies about  $\frac{1}{2}$  mile S. of the town.

*Supplies and Commerce.*—The position of Ödemish as a rail-head gives it considerable importance as an entrepôt of



trade. The chief local products are cereals, tobacco, valonia, silk, cotton, flax, raisins, and figs. There is excellent grazing-ground in the plain. Within the kaza there are mines of arsenic, copper, antimony, and mercury.

*Communications.*—Routes described in this volume connect Ödemish with :

1. Bayndyr (see Route 146).
2. Kassaba (see Route 145).
3. Salykhly (see Route 151).
4. Kelles (see Route 154).
5. Kiosk (see Route 152).

**PANDERMA.** P. and T. ; terminus of the Soma-Panderma railway ; pop. about 17,000, mainly Turks. There are said to be about 3,500 Greeks and 3,000 Armenians. The town is the head-quarters of the kaza of the same name in the independent sanjak of Karasi and contains the official residence of the metropolitan of the Greek Church, who, however, spends the greater part of the year at Artaki.

*General Description.*—The modern town was almost entirely rebuilt after a great fire in 1874. The houses are mostly of wood, and lie round the E. side of a bay open to the N., at the foot and on the face of a high cliff. The streets are straight and wide, in some cases well paved and bordered with trees. The four main thoroughfares converge on the mosque of Haidar Chaush, which overlooks a large square on the sea-front. The Christian quarter is situated at the N. side of the town and is clearly separated from the Moslem area. The quays and warehouses are modern and extensive. Besides a stone jetty connected with the shore by a wooden bridge 16 ft. long, there are two long wooden piers, chiefly used as landing-stages, and several smaller piers, two of which were built for heavy work by the military authorities during the war. The barracks lie to E. of the town.

*Supplies and Commerce.*—Provisions are plentiful. There is a large export trade in lambs, fowls, eggs, maize, barley, linseed, beans, silk, opium, sesame, cotton, valonia, and boracite. Water is supplied by a spring just outside the

town, which feeds about half a dozen fountains. The water is slightly salt and tends to decrease in summer. Good drinking-water is brought in casks from Ermeni Kõi about 8 miles by land NW. of the town (see Route 18). The chief local industry is the rearing of silk-worms. There is some trade in marble and in the dyeing of leather. The town is surrounded by vineyards, orchards, and gardens, and much excellent honey is produced in the neighbourhood.

Fuel and timber are brought from the Kapu Dagh peninsula, the Kara Dagh 6 miles E. of the town, and from the hill country S. of the Manyas Göl and Kirmasti.

*Hygiene.*—There is some fever in summer. Malaria is very prevalent at the Kapu Dagh isthmus.

*Communications.*—Besides the roads running to Artaki and the Kapu Dagh peninsula (Routes 17 and 18), routes run from Panderma to :

1. Chanak Kalesi (see Route 2).
2. Gönen and Balia Bazar Kõi (see Route 19).
3. Edremid (see Routes 24 and 25).
4. Susurlu (see Route 23).
5. Kirmasti (see Route 53).
6. Mikhalij and Brussa (see Routes 51, 52, and 55).

**SALYKHLI.** Alt. 265 ft. ; head-quarters of the kaza of the same name in the Sarukhan sanjak of the Aïdin vilayet ; P. and T. ; station on the Smyrna-Kassaba line ; pop. about 5,000, mainly Turks, with some Jews and Armenians.

*General Description.*—The town lies in the plain about  $\frac{1}{2}$  mile NE. of the station, with which it is connected by a fine avenue shaded by plane-trees. There are several khans along this avenue. The station itself lies among trees. The town is clean and well-built, and the streets are broad. The shops and many of the houses are built partly of wood, partly of stone, with tiled roofs. Besides the bazar there is a covered-in market.

*Supplies and Commerce.*—The chief products of the district are cereals, live-stock, hides, wool, grapes, cotton, tobacco, valonia, and liquorice, and a considerable trade is done in these commodities with Smyrna.

*Communications.*—Salykhly is an important road-centre. Routes described in this volume connect it with :

1. Kassaba (see Route 95).
2. Ak Hissar (see Route 96).
3. Simav (see Route 97).
4. Kula (see Route 101).
5. Alashehir (see Route 103).
6. Ödemish (see Route 151).

**SCALANOVA** (Gk. **Nea Ephesos**, Tk. **Kush Adasy**). Head-quarters of a kaza in the merkez-sanjak of Smyrna ; P. and T. ; pop. given in 1914 as 12,200, including 200 Armenians and Jews. Before the war there were vice-consuls here representing Great Britain, Norway, and Sweden, and consular agents for France, Italy, Greece, Holland, and Austria-Hungary.

*General Description.*—The town is picturesquely situated on the N. side of a hill which protects the Bay of Scalanova on the S. The bay is still further sheltered by the small island of Kush Adasy, which gives the Turkish name for the town. Near the harbour there is a walled quarter with an ancient khan forming a kind of citadel. The hill above the town gives a fine view of the surrounding country. About  $2\frac{1}{2}$  miles to S. a strong stream, the Deïrmendere, enters the sea. The water-supply of the town is drawn from it.

*Supplies and Commerce.*—There is a considerable export trade in raisins, figs, olives, tobacco, sesame, and leather. The town was formerly the chief port for the Maeander plain, but its importance has declined since the building of the Ottoman railway, which has diverted traffic to Smyrna.

*Climate and Hygiene.*—The climate is said to be healthy, and the water is good.

*Communications.*—The main road from Scalanova is the chaussée running N. into the Kayster valley to the rail-head at Ayasoluk (see Route 130). A road also leads E. into the Derbend Chai valley (see Route 131), whence branches diverge N. to Ayasoluk (see Route 131) and SE. or E. into the Maeander plain (see Routes 132 and 147). A track also runs southwards along the coast to Giaur Changly, sending off

a branch at the north end of the Ilija plain SE. to Sokia (see Route 133).

**SIMAV** (anc. Synaos). Head-quarters of a kaza in the Kutahia sanjak of the vilayet of Khodavendighiar and dépôt (before the war) for half a nizam and half a redif battalion ; P. and T. ; pop. about 6,000, all Moslems except 20 Greek families from Isbarta.

*General Description.*—The town lies at a height of about 2,700 ft. between two glens at the southern edge of the plain. A hill between the two valleys, formerly the acropolis of Synaos, is now occupied by the better-class houses. The bazar is down below in the plain. Behind the hill just mentioned rises a second higher summit, on which are the remains of a Byzantine castle. The greater part of the modern town is built round this hill on its E. and S. sides. Many of the houses are new, the town having been partly burned down by a great fire in the autumn of 1911. Behind it cultivated slopes rise to the well-wooded Simav Dag.

*Supplies and Commerce.*—The plain of Simav is very fertile, though unhealthy, and ordinary supplies are plentiful. Opium is extensively grown, and a considerable trade is done in the export of mats made of the reeds which fringe the lake. Some fishing is also carried on.

*Communications.*—Simav is a fairly important road-centre. Tracks connect it with :

1. Sindirgi and Bigadich (see Route 80).
2. Balat (see Routes 81 and 82).
3. Emed and Tavshanly (see Route 83).
4. Kula (see Route 98).
5. Salykhly (see Route 97).

A chaussée, completed in 1904, runs to Gediz (see the last part of Route 114 in the reverse direction).

**SMYRNA** (Tk. **Izmir**). Capital of the vilayet of Aïdin. Before the war there were British, French, Italian, Austrian, German, and Russian post offices in Smyrna, in addition to those under Turkish supervision, and consular staffs for Britain, France, Italy, the United States, Belgium, Holland, Norway, Denmark,

Germany, Austria-Hungary, Spain, Greece, Rumania, Russia, and Persia. There were also British, French, Italian, and Dutch Chambers of Commerce.

There are no very accurate figures for population. The total is probably between 250,000 and 300,000, of whom about half are Greeks, including about 50,000 Greek immigrants. The Moslems number something under a third of the whole, and there are 20,000–25,000 Jews (mostly of Spanish extraction), about 12,000 Armenians, and 15,000 Europeans and Levantines. With the exception of the businesses controlled by representatives of the western European nations and America nearly all the commerce and shipping are in the hands of the Greeks. The latter are also the best-educated element in the native population and possess the most fully developed national consciousness. Hence the prevailing language is Greek. French is the language of international intercourse. English and Italian are practically not spoken except by members of these nationalities, and German is almost unknown.

The predominantly Christian character of the city has caused it to be known among Moslems as Giaur Izmir ('Infidel Smyrna').

*General Description.*—The situation of Smyrna marks it out as one of the chief commercial cities of Asia Minor. It possesses a magnificent harbour no longer liable to the fate of being silted up, which has overtaken its ancient rivals, Ephesus and Miletus. On the landward side it is shut in by mountains, which, by reason of the protection they afforded, no doubt gave the site much of its importance in early times, but easy roads run either through or round the mountain bastion into the great valleys which give access to the interior. And the fact that it has been made the terminus of the railway lines which serve the west of Asia Minor has confirmed its importance, which otherwise might be threatened by the establishment of another port, e. g. in the Gulf of Mendelia.

Immediately above the city on the S. rises Mt. Pagos, crowned with the ruins of an ancient citadel. From the summit of the hill there is a magnificent view of the town and its

surroundings. On the E. side of the hill is the valley of the Melis Chai, up which run the Ottoman railway and the road leading into the Kayster and Maeander valleys. On the N. the stream has pushed forward a delta plain which projects into the eastern end of the bay and connects with the plain of Burnabad on the E. The main part of the town occupies the western portion of the delta plain. Across the eastern half of the base of the delta run the caravan-route to the E. and the French-owned railway which rounds the head of the gulf via Kordelio and runs to Kassaba and Afium Kara Hissar. The open spaces near the road and railway bridges over the Melis Chai are used as camping-grounds for camels. The apex of the delta, known as the Point, is occupied by warehouses and residential houses, most of the Consulates, the terminus station of the Ottoman railway, and the railway pier. The railway terminus is known as Point Station. There is a second station on the Ottoman line, known as Gephyri ('Bridge'), E. of the caravan-bridge.

Along the sea-front, from the Point on the NE. to the suburb of Karatash on the SW., a distance of nearly 2 miles, runs a broad stone-built quay, provided with a harbour-railway and tram-lines. Towards the south-western end of the quay are the Government buildings, barracks, and prisons, and adjoining these on the N. is the harbour, artificially protected by a mole, with the Customs' sheds. The harbour is much too small for present needs, and vessels making only a short stay do not enter it but communicate with the land by boats or lighters. There is no danger in doing so, as the bay is protected on the W. by the alluvial plain formed by the Gediz Chai before its lower course was diverted westwards into Agria Bay in order to prevent the silting up of the gulf.

The main streets of the city are Parallel Street and Frank Street, both running parallel to the quay, the former immediately behind it, the latter farther S. It is in Frank Street that most of the shops with European wares are found. In the lower part of the town which these two streets serve the strict division into quarters according to nationalities is no

longer maintained. The eastern portion of it is occupied mainly by Europeans. For the rest, four quarters may be noted, though these are closely dovetailed into each other in places. Behind Frank Street lies the prosperous quarter occupied almost exclusively by the Greeks, colonies of whom are also found in other quarters. On the south-west side of the Greek quarter is that belonging to the Armenians, distinguished by its general cleanliness and the regularity of its streets. It contains Basma Khane station, the starting-point of the French railway. Most of the traffic between this station and the harbour is carried by camels owing to the narrowness of the intervening streets. West of the Armenian quarter is a fairly extensive area occupied by Jews. This quarter is still much overcrowded in spite of considerable improvements effected within recent years. The bazars adjoin it on the N. Behind them and the Jewish quarter is the Turkish quarter distinguished by its numerous minarets, mosques, and baths. Here the houses rise, tier above tier, from the quay W. of the harbour up the slopes of Mt. Pagos. The streets are narrow and overhung by projecting windows and roofs.

*Supplies and Commerce.*—The water-supply is brought by aqueducts from the Takhtaly Dag and Paradisos and distributed by lead pipes. There are several public fountains in the Turkish quarter and a large number of artesian wells of good water, from most of which the water has to be pumped up.

About 30 per cent. of the pre-war imports came from Great Britain. The chief imports are cotton and woollen goods, calicoes, linen, coffee, sugar, potatoes, butter, leather, coal, iron and iron-ware, petroleum, &c. Among exports figs are the most important, then raisins. Sponges come from the islands of Rhodes, Symi, and Kalymnos, wax from the wooded Karian district, liquorice from the lower Maeander valley, wool and hides from the interior, carpets and rugs mainly from Ushak and Gördiz. A considerable export trade is done in emery from mines at various places in the vilayet. Antimony, chrome, and iron-ore are also exported. The *halva*

made in Smyrna is famous and is sent to Greece and Russia. Soap and furniture are manufactured on a large scale, silk and cotton goods are produced for local use, and there are iron and gas-works at the Point. Generally speaking, however, manufactures are little developed, and Smyrna is essentially an entrepôt of trade.

*Climate and Hygiene.*—For the three months of November, December, and January the rainfall is half the total for the year, and the spring is also fairly rainy. Accordingly at the beginning of summer there is a considerable amount of moisture in the ground, which produces luxuriant vegetation. The shade temperature in the dry season is frequently 102° F. during the day and the night temperature 92°. The heat is tempered, however, by the strong sea-breeze (*emvatis*) which in summer blows daily from the gulf during the midday and afternoon hours, often with great force. No place on the west coast of Asia Minor exhibits this phenomenon with greater regularity and force than Smyrna, where the orographic configuration acts as a funnel to compress the sea-wind.

A large series of meteorological observations has shown that the climate is of the characteristic Mediterranean type. The following are mean temperatures (F.):

<i>Jan.</i>	<i>April.</i>	<i>July.</i>	<i>Oct.</i>	<i>Year.</i>
46°	59°	80°	65·75°	62·6°

As compared with other large Oriental towns Smyrna may be described as healthy. There are no large rivers in the immediate neighbourhood to produce marshes, and consequently malaria is less prevalent here than it would otherwise be. Fever of a mild type is, however, common, and cholera and typhoid may almost be said to be endemic. During the war malnutrition increased the tendency to outbreaks of these diseases among the population. There have, however, been no serious epidemics for a good many years.

*Communications.*—It has been already pointed out that the mountains which enclose Smyrna are either traversed by easy passes or can be easily turned. The city has therefore good



land communications to N., S., E., and W. Routes described in this volume lead either from Smyrna itself or its suburbs to :

1. Menemen and Bergama (see Route 44).
2. Menemen (see Route 136).
3. Manisa (see Route 139).
4. Nif and Kassaba (see Route 137).
5. Fitrek (see Route 140).
6. Torbaly (see Route 143).
7. Vurla and Cheshme (see Routes 121 and 122).

**SOKIA** (Tk. **Söke**). Head-quarters of a kaza in the Äidin sanjak of the Äidin vilayet ; P. and T. ; rail-head of a branch from the Ottoman line ; pop. about 12,000, two-thirds of whom are Moslems.

*General Description.*—The town lies on both banks of a torrent-bed at the eastern end of Samsun Dagh. The Moslem quarter lies on the l. bank of the watercourse, and here also are the bazar, the khans, the railway station, and the konak ; on the r. bank are the Christian quarter, the Circassian quarter, and MacAndrews & Forbes's liquorice-factory. Most of the houses are constructed partly of stone, partly of wood.

*Supplies and Commerce.*—Sokia is the chief market town of the lower Maeander valley. The chief local products are figs, cereals, live-stock, and liquorice. There is a weekly market, and a thriving trade is done in the bazar.

*Communications.*—By its position in the depression between Samsun Dagh and Gümüş Dagh the town controls the easiest passage from the lower Maeander valley to the Gulf of Scalanova. It had therefore, before the building of the railway, great importance as an entrepôt of trade down the Maeander valley, and the road which leads from it to Scalanova, though less frequented than formerly, still carries a considerable amount of traffic. In this volume routes are described running between Sokia and :

1. Ayasoluk (see Route 132).
2. Plaka (and Scalanova ; see Route 133).
3. Milas (see Routes 175 and 176).

4. Aïdin (see Route 147).

5. Tire (see Route 148).

**TIRE** (anc. Teira). Alt. 460 ft.; head-quarters of a kaza in the merkez-sanjak of Smyrna; P. and T.; terminus of a line from the Torbaly-Ödemish branch of the Ottoman railway. The population was given in 1914 as 40,500, made up of roughly 35,000 Turks, 3,500 Greeks, 2,000 Jews, and a few Armenians, but this is probably an excessive estimate.

*General Description.*—The town lies among orchards at the foot of the northern slopes of Messogis. It was formerly an important halting-place for caravans, and the bazar is large. There are few traces of the ancient city. The railway station lies about  $\frac{1}{2}$  mile N. of the town.

*Supplies and Commerce.*—The building of the branch railway has restored Tire to its former position as an important entrepôt for trade. The water-supply is plentiful. The chief local products are raisins, figs, barley, wheat, butter, chestnuts, cotton, tobacco, and flax. There are a number of rope-factories in the town.

*Communications.*—Roads described in this volume connect Tire with:

1. Sokia (see Route 148).

2. Aïdin (see Route 149).

Roads also cross the Kayster valley to Bayndyr, Ödemish, and villages in the plain.

**USHAK** (anc. Temenothyrai). Alt. about 3,000 ft.; head-quarters of a kaza in the Kutahia sanjak of the vilayet of Khodavendighiar; P. and T.; station on the Smyrna-Kassaba line; pop. given in 1914 as 25,000, including a fair number of Greeks.

*General Description.*—The town lies at the junction of several valleys between low vine-clad hills. It was rebuilt after an earthquake and fire in 1894. Most of the houses are strengthened by iron stanchions in the walls. The railway station lies about  $\frac{1}{2}$  mile S. of the town in a dry valley at a little higher elevation than the plain.

*Supplies and Commerce.*—The chief local products are

cereals, valonia, opium, and carpets. Ushak is a centre for the carpet industry and for the allied trades of dyeing and wool-spinning. The water-supply is drawn from springs and a tributary of the Gediz Chai which runs through the town, supplemented by an off-take from the Banaz Chai about 10 miles to E.

*Hygiene.*—The climate is said to be healthy.

*Communications.*—The town has considerable importance as a junction of roads across the plateau. It commands the two main routes from the SW. and W., from Alashehir and Kula respectively, and that from Gediz on the N. Roads are described in this volume between Ushak and :

1. Alashehir (see Route 107).
2. Takmak (see Route 109).
3. Kula (see Route 110).
4. Gediz (see Routes 111 and 112).
5. Afium Kara Hissar (see Route 116).
6. Chivril (see Route 170).

## GLOSSARY OF WORDS COMMONLY USED IN PLACE-NAMES

**Achma**, open.  
**Achyk**, open, level.  
**Ada**, island.  
**Afiun (Afion)**, opium.  
**Agha**, master, sir.  
**Aghaj (vulg. Aghach)**, tree.  
**Aghyl**, cattle-pen, sheep-fold.  
**Aghyr (Akhyr)**, stable.  
**Aghyz**, mouth, outlet.  
**Aidos**, eagle.  
**Aine**, mirror.  
**Ajem**, Persian.  
**Ajy**, bitter, sour.  
**Ak**, white.  
**Akar**, flowing (of water).  
**Akche**, whitish.  
**Akhyr**. See **Aghyr**.  
**Ala, Alaja**, (1) high, (2) varied.  
**Alan**, clearing (in a forest).  
**Alt**, lower side, under side.  
**Alty**, six.  
**Altyn**, gold.  
**Ambar (Hambar)**, barn.  
**Armud**, pear.  
**Arpa**, barley.  
**Arslan (Aslan)**, lion.  
**Aryk**, thin, lean.  
**Asar (Assar)**, monument.  
**Ashaghy**, lower (*opp.* **Yokary**).  
**Aslan**. See **Arslan**.  
**At**, horse.  
**Atesh**, fire.  
**Avdan**, reservoir.  
**Ay**, moon, month.

**Ayasma**, sacred spring.  
**Ayi**, bear.  
**Azmak**, dry torrent-bed.  
**Baba**, father.  
**Badem**. See **Padem**.  
**Bagh**, vineyard.  
**Baghche**, garden.  
**Bakyr**, copper.  
**Bal**, honey.  
**Balta**, axe.  
**Balyk**, fish.  
**Bash**, head.  
**Bayat**, old, stale.  
**Bayr**, hill, slope.  
**Bazar**, market.  
**Bel**, pass over a mountain range.  
**Belend (Bilan)**, ridge.  
**Belud (Pelit)**, oak.  
**Besh**, five.  
**Bey**, gentleman, master.  
**Beyaz**, white.  
**Bilan**. See **Belend**.  
**Bin**, thousand.  
**Bir**, one.  
**Bogha**, bull.  
**Boghaz**, gorge, strait.  
**Bostan**, garden.  
**Böyük**. See **Buyuk**.  
**Boz**, grey; bare (of mountains).  
**Bozja**, greyish.  
**Bujak**, angle.  
**Bük(ü)**, bush.

**Bulak**, spring.  
**Bunar**. See **Punar**.  
**Burun** (**Burnu** ; lit. 'nose'),  
 spur, promontory.  
**Büyük** (**Böyük**), big.  
**Bych**, saw-mill.

**Chai**, river.  
**Chakal**, jackal.  
**Chal**, fox.  
**Cham**, pine.  
**Charshembe**, Wednesday.  
**Chatak**, settlement.  
**Chatal**, split, forked.  
**Chaus**, sergeant.  
**Chayr**, meadow.  
**Cheltik**, rice-field.  
**Cherkes**, Circassian.  
**Cheshme**, fountain.  
**Chibuk**, pipe.  
**Chichek**, flower.  
**Chiftlik**, farm.  
**Chimen**, turf, meadow.  
**Chine**, spur (of a hill).  
**Chöhan**, shepherd.  
**Chöl**, desert.  
**Chukur**, hole, pit ; deep, low-lying.  
**Chürük** (*vulg.* **Choruk**), slug-gish, marshy.  
**Chynar**, plane, maple.

**Dagh**, mountain.  
**Dam**, (flat) roof.  
**Dar**, narrow.  
**Dede**, grandfather, deified ancestor.  
**Deirmen** (**Deghirmen**), mill.  
**Deli**, mad, raging.  
**Delik**, hole.  
**Demir**, iron.  
**Deniz**, sea.  
**Depe**. See **Tepe**.

**Derbend** (**Devrent**), pass,  
 police station in a pass.  
**Dere**, valley, stream.  
**Derin**, deep.  
**Deve**, camel.  
**Devrent**. See **Derbend**.  
**Dib(i)**, foot of a hill.  
**Dish**, tooth.  
**Doghan**, falcon.  
**Dort**, four.  
**Düden**, underground river,  
 entrance to an underground  
 river.  
**Düldül**, nightingale.  
**Düz**, flat, level.

**Egri** (**Eyri**), crooked, bent.  
**Elma**, apple.  
**Emir**, prince.  
**Erik**, plum.  
**Eshek**, ass.  
**Eski**, old.  
**Ev**, house.  
**Evren**. See **Ören**.  
**Eyri**. See **Egri**.  
**Fasyl(lar)**, parting of roads.  
**Frenk** (**Firenk**), Frank, Euro-  
 pean.  
**Funduk** (**Fyndyk**), nut.  
**Gechid**, ford.  
**Gedik**, pass, clearing (in a  
 wood).  
**Geyik**, roe.  
**Giaur**, unbeliever, Christian.  
**Gök**, (1) heaven, (2) blue.  
**Gökje**, bluish.  
**Göl**, lake.  
**Gönük** (**Künük**), ditch, gutter,  
**Göverjin**, dove.  
**Göz**, (1) eye, (2) spring, brook.  
**Gül**, rose.  
**Gülgen**, elm.

**Gümüş**, silver.  
**Güzel**, beautiful.  
**Hach**, cross.  
**Haji**, pilgrim (to Mecca).  
**Hambar**. See **Ambar**.  
**Hammam** (**Hamam**), bath-house, bath, hot spring.  
**Han(e)**. See **Khan(e)**.  
**Harman**, threshing-floor.  
**Hissar**, castle, fort.  
**Hüyük**. See **Üyük**.  
**İki**, two.  
**İl**, people, district.  
**İlija**, hot spring.  
**In**, cave.  
**Inek**, cow.  
**Inje**, thin, slender.  
**Injir**, fig.  
**Iskele** (**Scala**), landing-place, railway station.  
**Jamy**, mosque.  
**Jebel**, mountain.  
**Jeviz**, walnut.  
**Jihan**, world.  
**Juma**, Friday (the Turkish Sunday).  
**Kady**, judge.  
**Kahve**, coffee-house.  
**Kale**, castle, fort, any ancient ruin on a hill.  
**Kalejik**, little castle.  
**Kanlı**, bloody; two-wheeled cart.  
**Kaplan**, tiger.  
**Kapu**, gate, defile.  
**Kar**, snow.  
**Kara**, black.  
**Karaja**, blackish.  
**Karakol**, police station.  
**Karanfyl**, pink, carnation.  
**Kardash**, brother.

**Kartal**, eagle.  
**Karie**, village.  
**Karynja**, ant.  
**Kash**, eyebrow.  
**Kassaba**, small market town.  
**Katyr**, mule.  
**Kavak**, poplar (*also* plane, lime-tree).  
**Kaya**, rock.  
**Kaz**, goose.  
**Kaza**, an administrative district.  
**Kazan**, pan.  
**Kechi**, goat.  
**Kel**, bald, bare.  
**Kemer**, arch, bend.  
**Kesik**, broken.  
**Kestane**, chestnut.  
**Khan** (**Han**), khan, caravan-serai.  
**Khane** (**Hane**), house.  
**Khoja**, master, teacher.  
**Kilisse**, church.  
**Kiraz** (**Kirez**), cherry.  
**Kirij**, lime.  
**Koch**, ram.  
**Koî**, creek. See also **Koyun**.  
**Köi**, village.  
**Koja**, husband, large.  
**Kol**, arm, branch.  
**Kömür**, coal.  
**Konak**, large house, town hall.  
**Köpek**, dog.  
**Köprü**, bridge.  
**Köse**, beardless, bare.  
**Koyun** (*vulg.* **Koî**, **Kuyun**), sheep.  
**Koyunlu**, rich in sheep.  
**Koz**, walnut.  
**Küçük**, little.  
**Kul**, servant, slave.  
**Kulak**, ear.  
**Kum**, sand.

**Kümbet**, tower, dome.  
**Künük**. See **Gönük**.  
**Kürd**, Kurd.  
**Kurd**. See **Kurt**.  
**Kurshun**, lead.  
**Kurt** (Kurd), wolf.  
**Kuru**, dry, arid.  
**Küse**, corner.  
**Kush**, bird.  
**Kuyu**, well.  
**Kuyun**. See **Koyun**.  
**Kuzu**, lamb.  
**Kylyj**, sword.  
**Kyr**, barren, arid.  
**Kyrk**, forty (often used of any large number).  
**Kyryk**, broken.  
**Kyshla** (**Kyshlak**) winter quarters, barracks, winter village.  
**Kyssa**, short.  
**Kysyk**, compressed, narrow.  
**Kyz**, girl.  
**Kyzyl**, red.  
**Kyzylja**, reddish.  
**Liman**, harbour, bay.  
**Lokanda**, inn, restaurant.  
**Maden**, mine, metal.  
**Maghara**, cavern, den.  
**Mahalle**, quarter (of a town).  
**Mal**, treasure.  
**Mandra**, cattle-pen, fold.  
**Medresse**, theological college.  
**Meidan**, open space, square (in a town).  
**Merdiven**, stair, ladder.  
**Merkeh**, ass.  
**Merkez**, market, administrative centre.  
**Mesjid**, small mosque.  
**Mezar**, grave.  
**Mezarlyk**, cemetery.

**Mudir**, governor of a nahie.  
**Muhajir**, immigrant, refugee.  
**Mukhtar**, headman of a village.  
**Musafyr**, guest, stranger.  
**Nahie**, an administrative district, parish.  
**Oba**, tent, farm, village.  
**Obruk**, pit, hole.  
**Oda**, room, guest-room in villages.  
**Odun**, wood.  
**Oghlan**, boy.  
**Oghul** (*possessive Oghlu*), son.  
**Öküç**, ox.  
**Oluk**, spout, gutter.  
**-ön** (**-önü**), front part.  
**Ordu**, camp, army corps.  
**Ören** (**Evren**, **Viran**), ruins.  
**Orman**, wood, forest.  
**Orta**, middle.  
**Ot**, grass.  
**Otuz**, thirty.  
**Ova**, plain, meadow.  
**Öyük**. See **Üyük**.  
**Öz**(ü), stream.  
**Padem** (**Badem**), almond.  
**Pambuk**, cotton.  
**Parmak**, finger; crag.  
**Pasha**, pasha.  
**Pelit**. See **Belud**.  
**Pershembe**, Thursday.  
**Poyraz**, north wind.  
**Porsuk**, badger.  
**Punar** (**Bunar**), spring, fountain.  
**Rum** (**Urum**), Greek.  
**Sakyz**, resin.  
**Saman**, straw.  
**Sanjak**, administrative district.

**Sarai.** See **Serai**.  
**Sarnych (Sarych),** cistern.  
**Sary,** yellow.  
**Sarymsak,** garlic.  
**Saz,** reed.  
**Scala (Iskele),** landing-stage.  
**Seki,** terrace, step.  
**Serai (Sarai),** palace.  
**Shab,** alum.  
**Shehir (Shehr, Shahr),** town, city.  
**Sheitan,** devil.  
**Sirke,** vinegar.  
**Sivri,** sharp, pointed.  
**Siyah,** black.  
**Soghan,** onion.  
**Sögüd (Söyüd).** See **Sügüt**.  
**Sorghun,** poplar.  
**Sowuk,** cold.  
**Su,** water.  
**Sügüt (Sögüd, Söyüd),** willow.  
**Susuz,** waterless.  
**Sychan,** mouse.  
**Syghyr,** ox, buffalo.  
**Takhta,** board, plank.  
**Tash,** stone.  
**Tavshan,** hare.  
**Teke (Tekie),** a monastery for dervishes.  
**Tepe (Depe),** hill.  
**Tilki,** fox.  
**Toprak,** earth.  
**Torba,** bag.  
**Toz,** dust.  
**Tülek (Tülük),** sparrow-hawk.  
**Türbe,** shrine.  
**Tut,** mulberry.  
**Tütün,** tobacco.  
**Tuz,** salt.  
**Tuzla,** saline.  
**Üch,** three.  
**Ufak,** small.

**Uj,** end, point.  
**Ulu,** large.  
**Urum.** See **Rum**.  
**Ushak,** servant, knave, peasant.  
**Üyük (Hüyük, Öyük),** hill, mound.  
**Uzun,** long.  
**Veran.** See **Viran**.  
**Vezir,** Vizier.  
**Vilayet,** province.  
**Viran (Veran, Veren),** ruined, ruins. See also **Ören**.  
**Yaban,** wild.  
**Yagh,** oil.  
**Yaghmur,** rain.  
**Yaila,** summer village, mountain pasture.  
**Yaka,** bank, border.  
**Yakhshy (Yakhsha),** good.  
**Yaly,** river-bank or sea-shore ; summer dwelling.  
**Yalynyz,** alone, solitary.  
**Yazyly,** written, inscribed.  
**Yedi,** seven.  
**Yel,** wind.  
**Yeni,** new.  
**Yenije,** newish.  
**Yer,** place, earth.  
**Yeshil,** green.  
**Yildirim,** lightning.  
**Yilan,** serpent.  
**Yimurta,** egg.  
**Yokary,** upper (*opp.* **Ashaghy**).  
**Yokush,** slope.  
**Yol,** road.  
**Yrmak,** river.  
**Yüksek,** high.  
**Yürük,** nomad.  
**Zeitin (Zeitun, Zaitun),** olive.  
**Ziaret,** sacred tomb.



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